THE IMPACT OF FOREIGN DIRECT INVESTMENT ON FINANCIAL SECTOR DEVELOPMENT: A CASE OF THE MENA REGION

by

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THE IMPACT OF FOREIGN DIRECT INVESTMENT ON FINANCIAL SECTOR DEVELOPMENT: A CASE OF THE MENA REGION

I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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Abstract

Various studies on international capital flows have established the deterministic role of local financial markets on the attractiveness of countries to inflow of foreign direct investment. The current study investigated the impact of FDI inflows on the financial sector development of countries in the Middle East and North Africa region for the period 2003 to 2016. Various panel data analysis methods were employed. These approaches included fixed effects, random effects, pooled OLS, FMOLS and the dynamic GMM. In addition, pre-estimation tests, diagnostic tests which included panel unit root and co-integration tests and robustness tests were conducted. Using both financial development proxies, broad money as a ratio of GDP (model 1) and domestic credit to the private sector (model 2), the study found that the lag in financial development had a significant positive effect on financial development. In model 1 under fixed effects, random effects and pooled OLS, FDI had a significant negative effect on financial development. In contrast, model 2 showed a significant positive relationship running from FDI to financial development under the pooled OLS method. The interaction between FDI and economic growth was found to have a significant negative influence on financial development in models 1 and 2 under the pooled OLS method. This finding indicates that economic growth had a deleterious effect on the impact of FDI on financial development in the MENA region. In the light of these results, policy makers in the MENA region countries should be urged to avoid undue reliance on FDI in their efforts to develop their financial sectors. Furthermore, the MENA region nations are urged to avoid implementing economic growth enhancement policies as a way of trying to improve financial development, directly or indirectly, as the effort has been shown to achieve the opposite effect.

Key terms: Foreign Direct Investment; Financial Sector Development; Mena Region, Economic Growth; Panel Data.

Opsomming

Verskeie studies wêreldwyd oor die vloei van internasionale kapitaal is dit eens dat aantreklike plaaslike finansiële markte direkte buitelandse beleggings (DBB) na lande laat stroom. Hierdie studie het die uitwerking van DBB in die tydperk 2003 tot 2016 op die finansiële sektore van lande in die Midde Oosterse en Noord-Afrikaanse (MONA) streek ondersoek. Verskeie paneeldataontledingsmetodes is gevolg, waaronder vaste en ewekansige effekte, saamgevoegde, gewone kleinstekwadratemetode (GKK), volgewysigde kleinstekwadratemetode (VGKK) en die dinamiese, veralgemeende metode van momente (VMM). Afgesien hiervan is voorberamings- en diagnostiese toetse, waaronder paneeleenheidswortel-, koïntegrasie- en robuustheidstoetse, toegepas. Op grond van sowel volmagte vir finansiële ontwikkeling, breë geld – as 'n verhouding van die BBP (model 1) – as binnelandse krediet aan die privaat sektor (model 2), is bevind dat die vertraging in finansiële ontwikkeling 'n opmerklik positiewe effek op finansiële ontwikkeling uitgeoefen het. In model 1, onder vaste effekte, ewekansige effekte en saamgevoegde GKK, het DBB 'n opmerklik negatiewe effek op finansiële ontwikkeling gehad. Model 2, daarenteen, het onder die saamgevoegde GKK-metode op 'n opmerklik positiewe verband tussen DBB en finansiële ontwikkeling gedui. Daar is in model 1 en 2 onder die saamgevoegde GKK bevind dat die wisselwerking tussen DBB en ekonomiese groei 'n opmerklik negatiewe effek op finansiële ontwikkeling gehad het. Hierdie bevinding is 'n aanduiding daarvan ekonomiese groei 'n nadelige effek op die uitwerking van DBB op finansiële ontwikkeling in die MENA-streek gehad het. In die lig hiervan moet die beleidsmakers van lande in die MONA-streek teen oormatige steun op DBB om hulle finansiële sektore te laat ontwikkel, gemaan word. Hierbenewens moet lande in die MONA-streek teen beleide vir ekonomiese groei as 'n manier om finansiële ontwikkeling regstreeks of onregstreeks aan te wakker, gewaarsku word omdat dit die teenoorgestelde uitwerking sal hê.

Kernbegrippe: direkte buitelandse belegging; ontwikkeling van die finansiële sektor; MONA-streek, ekonomiese groei, paneeldata

Ngamafuphi

Izifundo zocwaningo ezahlukahlukene ekuthunyelweni kwezimali sezisungule indima yezimpawu ezikhombisayo zokuthunyelwa kwezimali ezimakethe zasemakhaya mayelana nekhono lamazwe lokuheha ukutshalwa kwezimali okuqondile. Ucwaningo lwamanje luye lwaphenya umthintela wokungena kwezimali ngohlelo lokutshalwa kwezimali ngaphandle, phecelezi FDI mayelana nokuthuthukiswa komkhakha wezezimali emazweni asesiyingini esiseMpumalanga eMaphakathi (*Middle East*) kanye kanye nase-Afrika eseNyakatho (*North Africa (MENA)*, ukusukela onyakeni ka 2003 ukufika ku 2016. Izindlela ezahlukahlukene zokuhlaziya i*panel data analysis* ziye zasetshenziswa. Lezi zindlela ziye zaxuba imiphumela enqunyelwe isikhathi, imiphumela enganqunyelwanga isikhathi, uhlelo lwe *pooled OLS*, lwe FMOLS kanye nohlelo oluguquguqukayo lwe GMM. Ngaphezu kwalokho, izinhlelo zokuhlolwa phecelezi, *pre-estimation tests* kanye ne *diagnostic tests*, lokhu okuyizinhlelo ezixuba amayunidi ephaneli *panel unit root* kanye nohlelo lwe *co-integration tests* kanye nohlelo lwe *robustness tests*, nazo ziye zaxutshwa phakathi. Ngokusebenzisa zombili izinhlelo zokuthuthukiswa kwezinhlelo zezimal, imali ebanzi – njengesilinganiso semodeli 1 yeGDP – kanye nesikweletu sasekhaya esinikezwa imikhakha yamabhizinisi angasese asekhaya (imodeli 2), ucwaningo luthole ukuthi ukubambezeleka kwesikhathi sokuthuthukiswa kwezinhlelo zezimali kuye kwaba nomthelela omuhle kakhulu ekuthuthukisweni kwezimali. Kumodeli 1, ngaphansi kohlelo lwemiphumela enqunyelwe isikhathi, kwemiphumela enganqunyelwanga iskhathi kanye nasohlelweni lwe *pooled OLS*, uhlelo lwe FDI luye lwaba nomthelela omubi kakhulu kwezokuthuthukiswa kwezimali. Okuphikisana nalokho, imodeli 2 iye yakhombisa ubudlelwano obuhle kakhulu, ukuqala ohlelweni lokutshalwa kwezimali emazweni angaphandle (*FDI*) ukufika ohlelweni lwezokuthuthukiswa kwezinhlelo zezimali, ngaphansi kohlelo lwe *pooled OLS*. Ukuhlangana phakathi kohlelo lwe FDI kanye nokuhluma komnotho kutholakele ukuthi luye lwaba nomthelela omubi kakhulu ekuthuthukisweni kwezinhlelo zezimali, kumamodeli 1 nemodeli 2, ngaphansi kohlelo lwe *pooled OLS.* Lolu lwazi olutholakele lukhombisa ukuthi ukuhluma komnotho kuye kwaba nomthelela oyingozi kakhulu ohlelweni lwe FDI mayelana nokuthuthukiswa kwezimali esiyingini seMENA. Uma kubhekwa le miphumela, abenzi bemigomo emazweni asesiyingini seMENA kufanele

bacelwe ukuba bagweme ukwencika ngendlela engenasidingo ohlelweni lwe FDI kwimizamo yabo yokuthuthukisa imikhakha yezimali. Ngaphezu kwalokho, amazwe asesiyingini saseMENA ayacelwa ukuba agweme ukusetshenziswa kwemigomo eqinisa ukuthuthukiswa komnotho njengendlela yokuzama ukuthuthukisa izinhlelo zezimali, ngendlela eqondile nangendlela engaqondile, njengoba umzamo sewukhonjiswe ukuze kuphunyelelwe imiphumela engaqondiwe.

Amagama asemqoka: ukutshalwa ngqo kwezimali emazweni angaphandle, ukuthuthukiswa komkhakha wezezimali, isiyingi seMENA,ukuhluma komnotho, idatha yephaneli

DEDICATION

This dissertation is dedicated to my late father, Kwena Frank Maduane and my mother, Mrs Mmatsatsi Elizabeth Maduane, who instilled in me the importance of self-discipline, hard work and the significance of education. Thank you for all the sacrifices you have made for me, the support and the undying love you have shown me throughout the journey of my life. I will always be grateful.

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LIST OF ABBREVIATIONS AND ACRONYMS

The following abbreviations were used in this dissertation.

Abbreviation	Meaning
ARDL	Auto regressive distribution lag
BFA	Bureau of Financial Analysis
BM	Broad money
CPI	Consumer price index
DC	Domestic credit
ECM	Multivariate Error Correction Model (ECM)
EXCH	Local currency against the United States Dollar (US$)
FDI	Foreign Direct Investment
FGLS	Feasible generalised least squares
FIN	Financial development
FMOLS	Fully modified ordinary least squares
FSD	Financial sector development
GDP	Gross Domestic Product
GMM	Dynamic Generalized methods of moments
GR	Economic growth
HCD	Human capital development
IND	Industry value traded
IMF	International Monetary Fund
INFR	Infrastructure development
INFL	Inflation
INV	Investment
MENA Region	Middle East and North Africa Region

MNC	Multinational corporations
OLS	Ordinary least squares
OPEN	Total trade
POP	Population growth
SA	South Africa
SADC	Southern African Development Community
SAV	Gross domestic savings
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNEMPL	Unemployment
VAR	Vector autoregressive model
VECM	Multivariate vector error correction model
WDI	World development indicators

CHAPTER 1: INTRODUCTION TO THE STUDY

1.1 Chapter Overview

The study investigated the impact of FDI on financial sector development in the Middle East North Africa region. The study is anchored in the impact of FDI factors on financial sector development. In order to achieve this research, the aim of the dissertation is laid out in five chapters namely introduction, literature review, research methodology, pre-estimation diagnostics and main data analysis, conclusions and recommendations. This introductory chapter is arranged as follows: first, the background of the study is discussed to give an overview of the study. The problem statement is outlined followed by the research question and objectives. In order to highlight the gap and to provide a theoretical context to the study, literature review is discussed. The study observed the importance of ethical considerations, the expected contribution of the study, its delimitations, and the assumptions, validity and reliability of the findings. The following section discusses the background to the study.

1.2 Background

The current global and competitive business environment is constantly changing the way organisations operate and calls for innovative ways to improve processes and returns on investment (Agbloyor, Abor, Adjasi, & Yawson, 2013; Almalki & Batayneh, 2015). Because of this dramatic shift in the way businesses operate, more and more organisations are devising innovative ways of improving their market share and increasing their customer base (Cavusgil, Knight, Riesenberger, Rammal, & Rose, 2014). This has led to increased globalisation, where organisations extend their branches to operate in markets not only outside their countries and regions but also across continents. Hence, increased globalisation has encouraged the free movement of capital, goods and services across countries as well as continents (Cavusgil, *et al*. 2013). This has necessitated new development trends in business and a renewed focus by governments on foreign direct investment (FDI).

This study investigated the impact of FDI on financial sector development in emerging countries, in particular the MENA region. This is critical when one considers the aftermath of the global monetary crisis that now more than ever demands prudent financial management practices in public and private sectors alike. The study was undertaken within the MENA context, where the issues of social, economic and political stability have an impact on risk (Mehrara & Musai, 2015; Naceur, Cherif, & Kandil, 2014). The nexus between FDI, the environment and economic growth is of interest to the researcher. The introduction discusses the background, the problem statement, research questions and objectives, the contributions of the study and its reliability and validity.

MENA constitutes emerging countries and spans MENA countries. Most countries need FDI to boost their economic growth. It is instrumental in the development of host countries, creating avenues for technology transfer, human and physical capital accumulation and poverty alleviation (Scott-Kennel, 2004). The following table (1.1) shows bilateral investment treaties as well as other indicators in the MENA region.

Table 1.1: FDI, Bilateral Treaties in the MENA region during the period of (1990–2008) (Period Average)

	FDI Inflows			FDI stocks			Treaties			Other indicators		
	Net	Per Capita	% GDP	Net	Per Capita	% GDP	All	OECD	OIL	LABOUR	TRADE	INFLATION
Algeria	680.9	21	0.8	4838.1	152.5	6.2	15	6	1616.3	6596.7	57.4	11.0
Egypt	2596.0	34.2	2.5	22568.9	313.5	25.6	64	12	806.8	2654.4	52.0	8.9
Jordan	642.8	119	4.9	5289.9	1019.1	46.2	28	10	(0.0)	5464.9	127.1	4.7
Lebanon	1269.6	322.6	6.1	6842.8	1717.7	31.5	36	14	0.1	10973.8	69.0	15.0
Libya	648.2	105.9	1.1	1965.8	338.7	3.8	8	3	1526.1	15273.4	68.4	3.3
Morocco	1146.8	39.4	2.3	13249.9	450.8	25.1	35	13	2.5	3736.5	62.6	3.3
Syria	352.7	18.8	1.2	7289.1	443.8	38	20	5	513.3	3011.3	67.8	6.7
Tunisia	841.1	86.4	3.4	13903.9	1454.4	61.9	25	11	87.7	6040.1	95.0	4.1

Source: Adapted from World Bank (2012)

Table 1.1 indicates that FDI flows have varied across the MENA region. Egypt attracted the highest average level of FDI flows for the period of 1990–2008, amounting to roughly $2.6 billion in addition it accumulated the highest average level of FDI stocks, amounting to $22.6 billion. On the contrary, Syria attracted the lowest average level of FDI amounting to less than half a billion dollars. With FDI being expressed relative to GDP or in per capita terms, various countries seem to be the primary recipients of FDI during this period 1990–2008. Lebanon had the highest per capita averages, with stocks and flows amounting to approximately $1720 and $323 per capita respectively. Tunisia had the highest FDI stock at (62%), whereas Lebanon had the highest average FDI flow relative to GDP (6%).This study investigates a similar context but the focal point is financial sector development as a facet of economic development

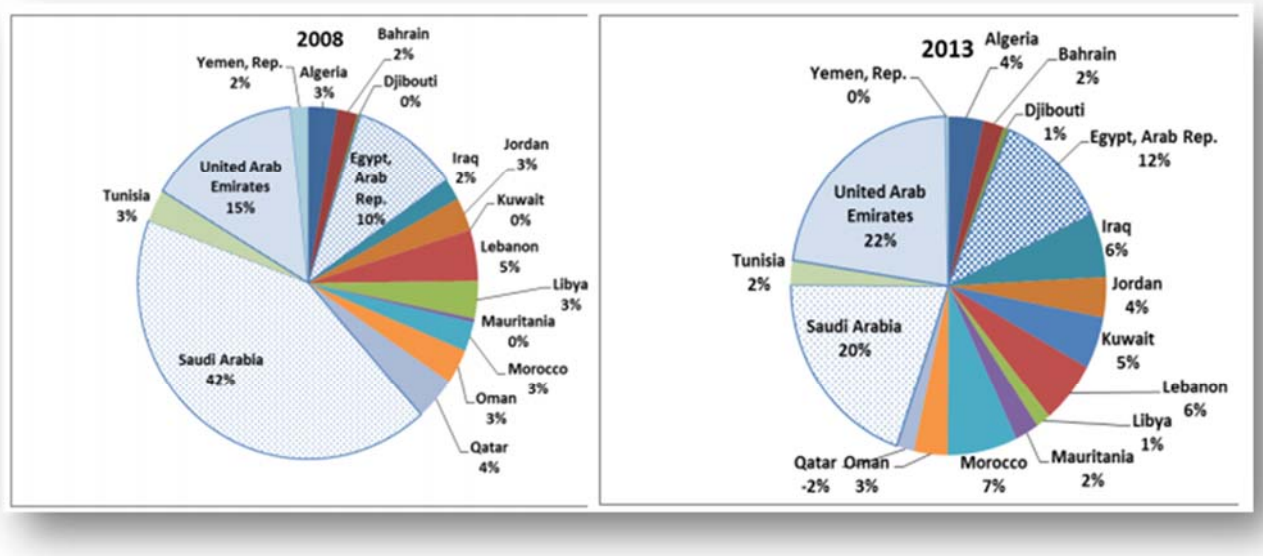

Figure 0.1: ***FDI inflows by the MENA country destination (% of the total)***

Source: Adapted from UNCTAD FDI Database (2014)

The United Nation Conference of Trade and Development (UNCTAD) report FDI figures for the MENA region every year. Figure 1.1 compares the FDI inflows into the MENA region in 2005 to those in 2013. This reveals how unevenly FDI inflows have been distributed in the MENA region. According to figure 1.1, in 2008 Saudi Arabia was the main destination

for FDI in the region at 42%, followed by the United Arab Emirates and Egypt with 15% and 10% respectively. The United Arab Emirates at 22%, Saudi Arabia at 20% and Egypt at 12% together accounted for 54% of the overall inward FDI balances in the entire region and remained the preferred locations for FDI inflows in 2013. This shows that FDI balances where concentrated in only a few specific countries, possibly attributable to the greater development of their infrastructure, their macroeconomic stability, and more relaxed channels (trade openness) for multinational companies (UNCTAD, 2014).

The chief recipients of FDI in both 2008 and 2013 were Saudi Arabia and the UAE. On the other hand, countries such as Djibouti, Libya and Qatar received the lowest FDI within the MENA region in both 2008 and 2013. On a period to period basis, FDI to Saudi Arabia dropped by 48% (20/42) between 2008 and 2013 while at the same time FDI inflows to the UAE increased by 47% (22/15). This may signal a move by investors from Saudi Arabia to UAE because of the significant investment opportunities arising from the deliberate plan by the UAE to improve its infrastructure. FDI in Egypt also increased by 20% (12/10). Countries affected by the Arab spring, such as Morocco and Egypt, saw an increase in FDI in 2013, perhaps the result of their rapid return to stability following the Arab Spring. However, countries such Yemen and Libya saw marginal drops ranging from 0–10% in FDI owing to persistent political instability.

FDI in emerging countries is pertinent to economic development (Alfaro, Chanda, Kalmli-Ozcan & Sayek, 2004; Esfandyari, 2015). FDI may promote economic growth, particularly in economies where financial markets are sufficiently developed. Furthermore, Coy and Cormican (2014) argue that FDI is more common and opportune in open economies than in tightly regulated ones and, if leveraged, may help emerging countries to transition from low to middle income status. As a result of the economic volatility in the abovementioned regions, the issues of the regulatory and socio-economic environment and its impact on FDI and economic growth in the financial sector was of interest to this study. Chee and Nair (2010) posit that in order for a country to achieve economic growth, it must first develop its financial sector, education and training and achieve an appropriate level of

technology adoption. Moreover, Dunning (1993) highlights the point that owing to the complexity of the determinants of FDI, ranging from government policies and economic activities to business enablement, there might be no single explanation for the effect of FDI on the financial sector. Consequently, the rationale behind a country's efforts to attract FDI could be the assumption that this would lead to financial gains, technology transfer and improved managerial skills (Scott-Kennel, 2004).

Crystal, Dages and Goldberg (2001) observe that in the 1990s FDI became the largest single source of external finance in the manufacturing and production sectors for many developing countries. More recently, however, FDI in the financial sector has soared and is reshaping the sector, although the specific mechanisms by which FDI contributes to the economic development of countries are unknown (Duttaray, Dutt, & Mukhopadhyay, 2008). FDI undoubtedly plays a vital role in the economic growth trajectory and it has also been noted that FDI in developing countries triggers capital accumulation, which may result in industrialisation; in developed countries, on the other hand, it facilitates the importation of technologies, new production and working practices (Cipollina, Giovannetti, & Piettrovito, 2012). However, it remains unclear whether FDI alone has an impact on financial sector development; this study therefore seeks to explore more in this territory. In the study, the researcher considered the nexus between FDI, the environment and economic growth in MENA countries. The following section outlines the problem statement.

1.3 Problem Statement

The subject of FDI and its impact on financial sector development has been investigated extensively but not exhaustively. Foreign capital is pertinent to the development of a vibrant financial sector. Literature shows that the impact of FDI has been investigated across the spectrum of economic growth, but studies also show that many of these investigations were conducted in developed countries (see for instance Chee & Nair, 2010; Hermes & Lensink, 2003). More so, only a few studies have investigated the impact of FDI within the financial sector exclusively (Azman-Saini, Law, & Ahmad, 2010). An extensive literature review of these phenomena revealed that most studies in this field have not focused

specifically on sectors within one country, but have cut across macro-economies. Furthermore, these scholars' conclusions and recommendations are conflicting at best, thereby providing very little guidance on the impact of FDI on the financial sector (Desbordes & Wei, 2017; Seghir, 2009). There is very little to show in terms of investigations focusing on the financial development sector in emerging markets, exclusively in the Mena region, as a unit of study. Undoubtedly, the continuing fragile nature of the MENA financial sector cannot be separated from the still fragile state of most of their economies. Most challenges in the region arise from social and political instability. Nevertheless, the dysfunctional nature of financial markets and institutions also explains slow economic growth. Investments remain relatively low in this region, limiting efforts to diversify economic structures and boost growth.

In addition, the literature suggests several technical aspects that reveal a dearth of findings. For instance, studies have ignored the fact that macro-economic variables usually take a long time to influence other macro-economic variable; previous studies have assumed that the influence of one macro variable on another is instantaneous (Tsaurai, 2018a; Adeniyi & Omisakin, 2012). The current study uses a lagged independent variable approach to address this gap. In addition, the literature reveals that previous studies assumed a linear relationship between FDI and FSD, ignoring the dynamic nature of the relationship between FDI and financial sector development. These studies did not investigate the complementarity between FDI and FSD either.

The lack of literature on the impact of FDI on FSD has left a gap in the knowledge pertaining to the issue at hand. The problem investigated in this study is the lack of adequate knowledge on the impact of FDI on the financial development sector in the MENA region. To this end, the study attempted to fill this void by providing empirically sound evidence of the impact of FDI in relation to financial sector development, building on existing FDI and finance sector development literature and using up to date data. Financial sectors in emerging economies are thin and have difficulty in mobilising domestic savings and attracting foreign private capital. The study investigated the impact of foreign capital on

financial sector development through capital accumulation. The following section discusses the research questions and research objectives.

1.4 Research Questions

In order to determine the impact of foreign capital in the finance sector, the following research questions were investigated. In this study, the research questions were:

1.4.1 What is the impact of foreign direct investment on financial sector development in the MENA region?

1.4.2 Is economic growth a channel through which FDI influences financial sector development?

1.5 Research Objectives

The research objectives of this study, using the MENA region countries as a unit of analysis, were the following:

1.5.1 To investigate the impact of FDI on financial sector development in the MENA region.

1.5.2 To explore whether economic growth is a channel through which FDI influences financial sector development.

1.6 Justification of the Study

Regardless of the economic development of a country, healthy and competitive financial markets are an extraordinarily effective tool in reducing the inequality in opportunities and eradicating poverty (Seghir, 2009). Furthermore Alfaro, Chanda, Kalmli-Ozcan, & Sayek, (2004) argue that financial markets are key to innovation since organisations always try to find solutions to the challenges facing them. They observe that when financial markets are developed, FDI affects economic growth positively. The resilience of FDI may have influenced many countries to regard FDI capital inflow as private capital inflow of choice in

many countries during the financial crises, it is essential that the impact of FDI on financial sector development be investigated, particularly in the MENA region.

As noted by researchers Adekele (2014), Khobai, Hamman and Mkhombo (2018), financial markets are too limited in developing countries and in many cases they are controlled by the government. For these reasons, determining the impact of FDI on the financial sector could assist governments in taking precautions to control the economy, such may include privatisation, improving and providing appropriate grounds needed to attract foreign capital, implementing appropriate policies for foreign investors such as market freedom policies, tax holidays and so on, in order to make the country more attractive to FDI.

1.7 Scope of the Study

The study investigated the impact of FDI on financial sector development in the MENA region. The main aim of the study was to establish which FDI factors had an effect on financial sector development. In order to achieve this aim, empirical investigations were conducted on the impact of FDI on financial sector development. The following steps were followed: firstly, an extensive review of literature on the impact of FDI on economic growth was undertaken, as both the economy and FDI are conduits for FSD. Secondly, the study investigated the relationship between FDI and FSD in order to establish which factors had an impact on FSD. It must be noted that since the financial sector is a sub-sector of the bigger economy of the countries under investigation, the researcher looked at the influence played by economic growth in this relationship. In addition, the study also examined the causal relationship between FDI, economic growth and financial sector development in the MENA region to ascertain the extent of bidirectional relationships amongst the variables.

1.8 Reliabilty and Validity in Research

The most pertinent and fundamental features of any measurement technique are reliability and validity and these lie at the core of competent and effective study (Bajpai & Bajpai, 2014).This section considers the following important issues as articulated in Bajpai and Bajpai (2014);

1.8.1 How productive can any research be if the instrument used does not actually measure what it purports to?
1.8.2 How justifiable is research that is based on an inconsistent instrument?
1.8.3 What constitutes a valid instrument?
1.8.4 What are the implications of proper and improper testing?

Reliability can be defined as dependability or consistency (Neuman, 2006). Reliability constitutes the estimation and evaluation of the stability of measures, internal consistency of measurement instruments and interrater reliability of instrument scores (Kimberlin & Winterstein, 2008). It is imperative to ensure that the same measurement and response are obtained under identical or very similar conditions (Bajpai & Bajpai, 2014).

In an effort to ensure the reliability of the study's findings, the researcher used panel-data regression technique, as in Tsaurai's (2017a) study of the impact of financial sector development and FDI. The present study used secondary data drawn from reputable agencies, namely the World Bank, World Development Indicators, the African Development Bank, Global Financial Indicators and International Financial Statistics. Methodology drawn from literature ensured reliability and consistency (see for instance Tsaurai, 2017a). Measurement accuracy refers to capturing the responses as the respondent intended them to be understood (Bajpai & Bajpai, 2014). The study used methods such as cronbach alpha to measure consistency.

In the case of validity, the researcher adhered to the principles of trustworthiness throughout the research process. Validity is concerned with whether the study measures the right concept or not and several types of validity tests are used to test the goodness of measures including content validity, criterion validity and congruent validity (Bajpai & Bajpai, 2014). Content validity refers to the extent to which the measuring instrument addresses the topic under study that the measurement is intended to measure (Blumberg, Cooper, & Schindler, 2005). In this case, the researcher selected independent variables and dependent variables that were in keeping with the title, the research objectives and

the research questions of the study. In addition, a survey of literature on FDI and financial sector development was conducted, in which the researcher consulted publications on the subject by various renowned authors.

Construct validity refers to the extent to which the measuring instrument will produce results that are equivalent to those produced by other instruments, and whether the instrument is able to discriminate between similar constructs (Stacey, 2005). Construct validity constitutes the extent to which the results obtained from the use of the measure fit the theories around which the test is designed (Bajpai & Bajpai, 2014). In this case, validity was ensured by reviewing related literature on studies by researchers in the same field. This study focused on the research methodology and analytical tools used in previous studies (see for instance, Artige & Nicolini, 2005; Chang Lo, Tsung-Li Chi, & Joseph, 2013,Chaudhuri & Banerjee, 2010).

1.9 Chapter Outline

Figure 1.2 indicates the general layout of the dissertation

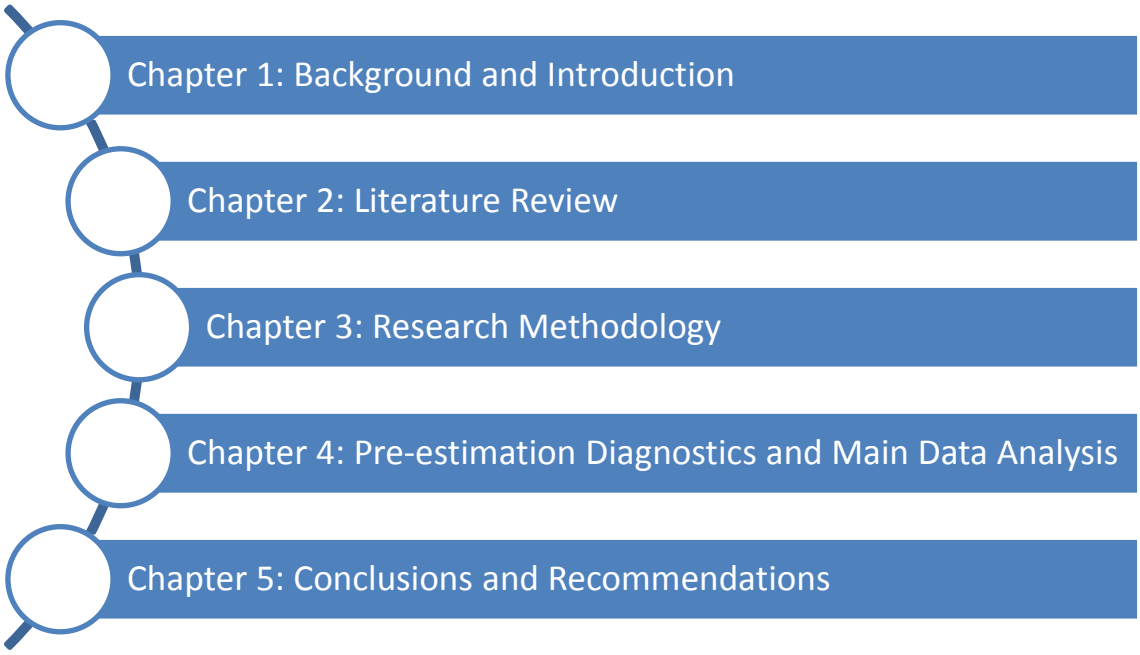

Figure 0.2: Layout of the dissertation

The remainder of this dissertation is structured as follows:

Chapter 2 Literature review

The literature review is introduced and discussed with the aim of providing a comprehensive discussion of the literature covering a range of topics and sub-topics. The literature review indicates where the specific topic under investigation fits into the “bigger picture” of the academic field of study. The researcher’s aim in this section was to properly integrate and synthesise information and to provide a well-supported point of view.

Chapter 3 Research methodology

The chapter on research design and methods contributes to the study by providing evidence of an understanding of research paradigms and philosophical approaches to research. The chosen strategy of inquiry, the research design and methods appropriate for the research problem in question are discussed in this chapter.

Chapter 4 Pre-estimation diagnostics and main data analysis

The findings of the study are presented in a logical sequence and are linked to the research questions and objectives posed in the introduction. The section provides an interpretation of the findings and establishes that these are technically correct and substantiated by the results of the analysis.

Chapter 5 Conclusions, recommendations, and suggestions for future research

The conclusions and policy implications of the study are presented in this chapter. The main findings of the study are summarised and the contribution of the study is also discussed. The researcher offers well-motivated and insightful suggestions for future research on the topic.

1.10 Chapter Summary

This chapter introduced the investigation, which focuses on the impact of FDI on financial sector development. The findings of the study will add to the well-researched area of FDI and is based on empirical evidence from the MENA region's finance sector. The dissertation is divided into five chapters namely introduction, literature review, research methodology, pre-estimation diagnostics and main data analysis. The dissertation concludes with chapter five, which comprises the conclusion, recommendations and suggestions for future research. This introductory chapter was arranged as follows: first, the background of the study was discussed to provide an overview of the study. The problem statement was then outlined, followed by the research question and objectives. To highlight the gap and to give theoretical context to the study, literature was reviewed. The chapter highlighted the importance of the following: ethical issues, the contribution of the study, delimitations, assumptions, validity and reliability of the study. The next chapter presents and discusses key theoretical and empirical aspects of the literature on the main concepts of FDI and financial sector development.

CHAPTER 2: LITERATURE REVIEW

2.1 Chapter Introduction

This chapter provides a review of previous studies conducted on the impact of foreign direct investment, financial sector development and economic growth, with particular reference to theoretical and empirical perspectives. The researcher identifies the gap in existing knowledge and evaluates the existing literature to support the motivation for this study. The review of literature is guided by the research questions and research objectives, and provides arguments for and against the hypotheses of the study. The chapter layout is as follows; background of FDI and financial sector development, theories underlying FDI, determinants of FDI in the financial sector, motives of FDI, types of FDI, the theoretical and empirical literature and the relationship between FDI and financial sector development. The theoretical section investigates the effect of FDI on financial sector development. The study focuses on the Mena region, which is classified under emerging markets. In order to provide a context for the study, the next section investigates the background of FDI and financial sector development in emerging countries.

Research on the nexus between FDI and economic growth across a spectrum of economies has been extensive. Kelly (2016) asserts that several studies have investigated the relationship between FDI and economic growth and many theories have been proposed. However, the relationship between FDI and specific economic sub-sectors has not been investigated exhaustively in emerging markets. Coy and Cormican (2014) argue that few areas in economic development theory have aroused as much controversy as issues pertaining to the benefits and costs of FDI in the host economy. Of interest to this study is the finance sector. The finance sector is a gateway to capital flows between countries and the development of this sector plays a critical role in sustainable economic development. Dunning (1993) proposes that owing to the complexity of the determinants of FDI, ranging from government policies, economic activities and business enablement, there might be no single explanation for the impact of FDI on the financial sector. This study aims to bridge the knowledge gap by expounding on the literature and contributing

scientifically to the empirically based evidence on the nexus between FDI and financial sector development in the MENA region. Inekwe (2013) believes that the links between FDI and economic growth remain uncertain and understanding of the impact of FDI in emerging countries is generally limited; as such, there is a need for further investigation. One of the objectives that emerging countries have is to ensure that FDI positively affects the local economic growth trajectory. Rashid, Looi and Wong (2017) argue that if FDI results in economic growth, priority should be given to sectors that have the greatest impact on economic development. This study investigates the impact of FDI on financial sector development as a facet of economic growth in emerging countries (MENA region).

2.2 Understanding FDI and Financial Sector Development

The following section looks at the definitions of key terms used in this study.

2.2.1 Definition of Foreign Direct Investment (FDI)

The International Monetary Fund IMF (1993) defines FDI as an investment "that reflects the objective of a resident entity in one economy obtaining a lasting interest in an enterprise resident in another economy". In this definition, the resident entity referred to as the foreign investor owns an equity capital stake of at least 10% of the ordinary shares in an incorporated enterprise, or its equivalent in an unincorporated enterprise (Bartels, Kratzsch, & Eicher, 2008). Agiomirgianakis, Asteriou and Papathoma (2003) define FDI as capital flows resulting from the behaviour of multinational companies (MNCs).

Yu and Walsh (2010) observe that FDI flows into a country's primary, secondary and tertiary sector investments. This implies that since FDI results from attracting foreign investments, it should facilitate the creation of markets between local and foreign business. Hence, FDI empowers a country's economic growth by providing innovative technological expertise, capital, and access to foreign markets for local goods and services. Coy and Cormican (2014) explain that FDI is essentially an international investment, where the investor not only gains significant influence in the management of

an entity in a foreign country but also carries the responsibility of marketing the services and products in it.

2.2.2 Definition of Financial Sector Development

Bonin and Watchel (2003) explain that a financial sector is set of institutions, markets and instruments that include legal and regulatory frameworks that allow transactions to take place. Ang and Mckibbin (2007) note that the financial sector is a conduit for a diverse set of transactions and facilitates the efficient flow of capital; its development is imperative for sustainable economic growth. Financial sector development is primarily concerned with overcoming cost inefficiencies in the financial system to achieve the goal of cost rationalisation. Financial sector development takes place when intermediaries, financial instruments and markets operate together to reduce the cost of information, transactions and re-enforcements (Le, *et al.* 2016). Developed financial markets allow for the transfer of resources from savers to investors and this influences the economy positively (Chami, Fullenkamp, & Sharma, 2009). Financial sector development plays a crucial role in attracting investment and inward bound capital flows. Wurgler (2000) observes that countries with developed financial markets have more investments than those with weak financial markets. There is a positive association between financial market development and economic growth (Chami, *et al.* 2009). Financial markets provide a conducive environment for technological innovations and financial development is also a byproduct of economic expansion (Chami, *et al.* 2009; Le, *et al.* 2016). The following section discusses the theories of FDI, economic growth and development.

2.3 Theory of Foreign Direct Investment and Economic Growth

The effect of FDI flows on economic growth has been a contentious issue for many studies, most of which have focused predominantly on middle to low income countries (see for instance Adam & Tweneboah, 2009; Adams, 2009; Agbloyor, *et al.* 2013). However, irrespective of disagreements on whether or not FDI contributes to growth, there is general agreement on the theory that FDI promotes growth through other factors in the host, including but not limited to human capital, the financial system, infrastructure and institutions (Kamara, 2013). This study focused on four major theories that explain the impact of FDI on economic growth, namely modernisation theory (see Chowdhury & Mavrotas, 2005), dependency theory (see Amin, 1974), neoclassical economic growth (see Solow, 1956) and endogenous growth theories (see Romer, 1986, 1990; Wilhelms, 1998).

Firstly, modernisation theories posit that FDI can be a catalyst for economic growth in emerging economies; these theories are premised on the endogenous growth theory and the neoclassical theory (Adams, 2009; Hodrob, Maitah, & Kuzmenko, 2016). The theory of modernisation is founded on the need to fund developing countries through the provision of capital (Saqib, Massnoon, & Rafiq, 2013). As noted above, these theories suggest that FDI can promote economic growth in emerging markets (Alfaro, *et al.* 2004). Most emerging markets have infrastructure deficits and supplying capital enables the construction and acquisition of infrastructure Hodrob, *et al.* (2016) argue that modernisation theories show a superior understanding of the factors that drive the impact of FDI on host countries.

Secondly, dependency theory came about in reaction to modernisation theory, which posits that societies follow similar stages of development and those that are left behind must be assisted in following a similar growth path (Agbebi & Virtanen, 2017). In order to achieve this, the task of aiding emerging markets to accelerate them on a common path is outlined in the theory of modernisation. The modernisation theory states that means such as technology transfers and investment flows into emerging markets will accelerate growth (Hodrob, *et al.* 2016). Dependency theory rejects this view, however, arguing that resources

actually flow from emerging markets to developed markets. The idea behind dependency theory is that the flow to wealthier countries of resources from poorer states bolsters the riches of the wealthier states at the expense of the poorer states (Adams, 2009). Dependency theorists argue that capital inflow dependence is expected to have a negative effect on growth and income distribution (Agbebi & Virtanen, 2017). Amin (1974) agrees that an economy that is in the control of foreigners does not organically develop but its manner of growth is disarticulated. The reason for this is the weakness in the multiplier effect, where demand in one sector of the economy creates demand in another, resulting in stagnant growth in the host economy (Adams, 2009). This assertion is pertinent as most FDI to emerging economies is in the natural resources sectors, which pose considerable barriers to entry (Pigato, 2000).

Thirdly, the neoclassical growth theory, also known as the exogenous growth model, states that accumulating capital is important as it contributes to a steady economic growth trajectory (Solow, 1956; Swan, 1956). Total factor productivity is greatly affected by FDI, which is influenced by external factors, and this means that steady economic growth cannot be guaranteed. In addition, neoclassical economic theories of FDI support the idea of a positive relationship between economic growth and FDI. Kojima (1978) argues that the transfer of capital is not only influenced by marginal productivity, but is also affected by differences in technology gaps. Thus, FDI arises from areas of low technology to those with higher technology. Neoclassical theories have the following advantages: the introduction of modern technology from developed countries to developing countries, the introduction of new managerial skills training for workers, employment generation, improved balance of payments, an upsurge in competition that leads to the optimisation of resources usage and growth productivity (Kojima, 1978). The difference between the new growth theory and the neoclassical growth theory is the technology aspect. Neoclassical theory views technology from an exogenous perspective whilst new growth theory considers technology to be a form of investment spillover, arising from other sources such as human resources, capital or research and development (Kojima, 1978; Amin, 1974). Krugman (1998) indicates that based on the framework of neoclassical models, the impact of FDI on the growth of output

is constrained by the existence of diminishing returns on physical capital without any long-run effect. Ozturk (2007) also notes that within neoclassical growth theory, economic growth generally comes from two sources, total factor productivity growth and factor accumulation. Moreover, the focus is on growth of factor inputs mainly because these are easy to quantify. As a result, studies have reported differently on the FDI-growth nexus, as well as using different theories to justify their findings.

Nor, Ripain and Ahmad (2015) argue that the degree of financial freedom has a positive influence on the FDI-growth relation while Adekele (2014) indicates that with countries such as those in sub-Saharan Africa, governance is a critical factor. Ozturk (2007) notes that there is an observable impact of FDI on growth nexus, but this could depend on which neoclassic point of view has been considered or which countries have been involved in the study.

Finally, in the endogenous growth model, the generation of technological diffusion from the developed world to the host country facilitated by FDI raises economic growth (Borensztein, Gregorio, & Lee 1998). Consistent with the endogenous theory, Álvarez and Marín (2013) posit that technological absorption levers or magnifies competitiveness through an increase in effectiveness and efficiency in productivity. Technology brings about several advantages to the host country, such as leap-frogging to match the levels of technology to those in developed countries. Technology is an external factor that brings about opportunities as well as threats, and an infusion of the appropriate technology together with the relevant skills can enhance efficiency, reduce costs and increase operational effectiveness. Technological diffusion also enhances exports through research support and development. Endogenous growth theory increases long-run growth through innovation growth in research and development, and this increases exports (Mehrara & Musai, 2015). Yu and Walsh (2010) observe that the FDI-growth nexus can best be explained in terms of the endogeneity problem or feedback mechanism, although Chowdhury and Mavrotas (2005) argue that there are mixed results in the direction of causality between FDI and economic growth. Similarly, other researchers such as Chee and Nair (2010) have agreed that much

as there are ambiguities in the results of the FDI-growth nexus, financial sector development enhances the contribution of FDI to economic growth. Indications are that the complementary role of FDI and financial sector development on economic growth is most important to the least developed economies (Adekele, 2014; Khobai, *et al.* 2018). The following section discusses the empirical literature on the impact of FDI on economic growth.

2.4 Impact of FDI on Economic Growth – Empirical Literature

This section discusses empirical literature that has investigated the impact of FDI on economic growth. Empirical studies conducted on the FDI-led growth nexus have found both negative and positive relationships between the two variables (see for instance Belloumi, 2014; Jensen 2003; Li & Liu, 2005). Although theoretical literature has demonstrated various ways in which FDI enhances local economies, there is still a lack of consensus on the direction of causality between FDI and economic growth. Popescu (2014) investigated emerging countries in Europe by looking at the role of FDI and exports on economic growth, finding that lagged FDI had a relevant positive impact on a country's economic growth. Economic development can be measured by the GDP of the country; to this end, the researcher looks at how FDI can influence factors that affect GDP. Governance is a factor that affects GDP and Popescu (2014) found that the expectation of attracting FDI generated enhancements in governance; furthermore, a macroeconomic environment that is sound and with low inflation determines FDI. Moreover, openness substituted by the share of exports in GDP has a positive influence on the net inflows of FDI. Popescu (2014) shows that both openness and exports have an influence on GDP and both are components of the economy.

Economic growth and FDI influence each other as FDI influences economic growth and economic growth influences FDI (Adams, 2009). Alfaro, *et al*. (2009) found that FDI leads to higher additional growth in developed economies. Hsiao and Shen (2003) reported that economic growth was one of the crucial factors in attracting FDI to emerging countries. Furthermore, Lee and Chang (2009) posit that FDI has a large direct effect on economic

growth and extends the potential gains associated with FDI. Nguyen and Nguyen (2007) identified the two-way linkage between FDI and economic growth in which FDI stimulates economic growth, and in turn, economic growth is viewed as a tool to attract FDI. A study by Belloumi (2014) on the relationship between FDI, trade and economic growth in Tunisia using the ARDL approach on data ranging from 1979 to 2008 confirmed that there was a long-run relationship between FDI and economic growth; however, the study also failed to find any significant Granger causality between FDI and economic growth and vice versa.

Popescu (2014) argues that competitiveness anchored in labour costs influences the entry of FDI; low labour costs are the chief motivator of vertical FDI. In the same vein, earlier studies by Aitken, Hanson and Harrison (1997) have shown evidence of beneficial spillovers from multinational enterprises to the host economy. This evidence suggests that FDI and economic growth are complementary and that the benefits of FDI to both countries and companies is mutual. Some studies have indicated that the direction of causality between economic growth and FDI is subject to country specific factors (Zhang, 2001). In an investigation of capital fundamentalism, economic development and economic growth, King and Levine (1994:260) found that the relationship between FDI and economic growth was contextual or relative to the nation; 'differences in national patterns of physical capital accumulation can explain many differences in levels of national product, and … increases in national investment rates can produce major increases in rates of economic growth'.

Using both cross-sectional and panel regression analysis of 114 countries with data ranging from 1970 to 1997, Jensen (2003) found that FDI is a prerequisite for an economy's employment, improvements to productivity and economic growth of the local economy as it provides physical capital and employment opportunities that might not be available in the host country. In line with Jensen (2003), Li and Liu (2005) investigated the impact of FDI and economic growth. Using panel data for 84 countries between 1970 and 1999, their study showed that there was a significant relationship between FDI and economic growth. They further argued that FDI alone does not stimulate an increase in economic growth but needs to be combined with human capital.

Li and Liu (2005) found that FDI had a significant negative impact on economic growth where there was a gap in technology. Using a cross-country regression framework of 69 emerging countries over two decades from 1970 to1989, Borensztein (1998) examined the influence of FDI on economic growth. They found that FDI had a positive significant effect on economic growth through the transfer of technology. In addition, FDI was found to make a greater contribution to the local economy than domestic investment. This argument is supported by Adeniyi and Omisakin (2012), who argue that FDI has a positive effect on the accumulation of capital, which results in growth of the overall domestic financial sector. FDI also plays a vital role in promoting economic growth through technology spillover. The following section looks at the other factors that influence financial sector development.

2.5 Other Factors that Influence Financial Sector Development

The study investigates FDI as the main variable that has an impact on financial sector development; however, the researcher acknowledges other factors besides FDI that affect financial sector development, namely money supply, SMI (stock market index), domestic credit, economic openness, CPI (consumer price index) market size, cost of production, exchange rates, rate of return, infrastructure, human capital and political stability, as discussed below.

Table 2.1 provides details of some of these variables or determinants that influence financial sector development that were used in the study, as well as similar studies that have applied these variables.

Table 2. 1: Other variables that influence Financial Sector Development

Financial Sector Development variables	Sources (similar research studies)	Direction of the impact of variables on FSD	Methodology used
MONEY SUPPLY (M3)	(Ogunmuyiwa & Ekone (2010)	Money supply →FSD	Econometric technique –O.L.S.E, causality test and E.C.M to time series data
	Badarudin, Ariff & Khalid 2011)	Money supply →FSD	VECM and Granger causality tests
	Schwartz (2017) Mugableh (2015)	Money supply →FSD	Time series (unconditional error correction approach)
STOCK MARKET INDEX	Dimpfl (2014)	SMI →FSD	Cointegration analysis
	Olweny & Kimani (2011)	SMI →FSD	Granger causality test
DOMESTIC CREDIT	Lane & McQuade (2014)	Domestic credit →FSD	Panel data Analysis
	Loayza & Ranciere (2006)	Domestic credit →FSD	Panel of cross-country and time-series

TRADE OPENNESS	Polat, Shahbaz, & Rehman, (2015)	Trade openness →FSD	Combined cointegration approach
	Dominte (2006)	Trade openness →FSD	Cross sectional data
	Tsaurai (2017b) & Tsaurai (2017c)	Trade openness →FSD	Vector Error Correction Model (VECM) with the annual time series data
	Le, Kim & Lee (2016)	Trade openness →FSD	Panel data –dynamic generalised method of moments
	Sonmez & Sener (2009)	Trade openness →FSD	Panel data analysis
	Kim, Lin, & Suen, (2010).	Trade openness →FSD (long run)	Pooled mean group (PMG) approach
	Almalki & Batayneh (2015)	Trade openness ←FSD (short run) Trade openness ←FSD	Autoregressive distributed lag (ARDL)

INFLATION (CPI)	Almalki & Batayneh (2015)	Low inflation →FSD High inflation ←FSD	Autoregressive distributed lag (ARDL)
	Bittencourt (2011)	High inflation ←FSD	Panel time and series data
	Ozturk & Karagoz (2012)	Inflation ←FSD	Autoregressive distributed lag (ARDL)
	Rousseau & Yilmazkuday (2009)	High inflation ←FSD	Cross country analysis
	(Hami, 2017)	Inflation ←FSD	Time series
	Sartangi, Dehkordi, & Kazemi (2018)	Inflation ←FSD	Panel data
MARKET SIZE (GDP)	Demirhan & Masca (2008)	Market size (GDP) → FSD	Cross sectional econometric model
	Agiomirgianakis, *et al*. (2003) Dunning (1998)	Market size (GDP) → FSD	Panel data method
	Singhania & Gupta (2011) Jadhav (2012)	Market size (GDP) → FSD	Auto regressive integrated moving model Panel data (panel unit root test)
EXCHANGE RATES	Acosta, Baerg, & Mandelman, (2009)	Lower exchange rate →FSD	Panel data analysis
	Aghion, Bacchetta,	Exchange rate uncertainty ←FSD	Panel data

	Rancière, & Rogoff (2009)		
	Yu & Walsh (2010)	Weaker exchange rate →FSD	GMM dynamic approach
	Mugableh (2015)	High exchange rate ←FSD	Time series (Unconditional error correction approach)
	Kyrkilis & Pantelidis (2003)	Weaker/lower exchange rate →FSD	Annual time series data
INFRASTRUCTURE	Tsaurai & Ndou (2019)	infrastructure →FSD	Panel data (Dynamic GMM)
	Roller & Waverman(2001)	Telecommunications infrastructure →FSD	Micromodel estimation
	Calderón & Servén (2004)	Infrastructure →FSD	Panel data analysis(GMM)
HUMAN CAPITAL	Xu, Lai, & Qi, (2008)	Human capital →FSD	Panel data unit root tests
	Tsaurai (2017b)	Human capital →FSD	Panel data analysis
	Kyrkilis & Pantelidis (2003)	Human capital →FSD	Annual time series data
	Benhabib & Spiegel (1994)	Human capital →FSD	Cross-country estimates

Source: Author's compilation (2019)

→ denotes positive impact of the variable on financial sector development

← denotes negative impact of the variable on financial sector development

Money supply is the total amount of money in circulation in an economy at any given time (Badarudin, *et al.* 2011). An increase in the supply of money causes a reduction in interest rates, which spurs investment by putting more money in the hands of consumers, making them feel wealthier, and thus stimulating spending (Schwartz, 2017). Money is utilised in all economic transactions and it has a powerful influence on economic activity (Schwartz, 2017). Interest rates may rise as a result of a decrease in money supply; higher interest rates attract inward bound FDI. Increases in FDI flows enhance liquidity and improve financial sector development.

The stock market index is a measurement of the value of a segment of a stock market and it is useful for financial investors and managers when describing the market and making a comparison of selected stocks (Dimpfl, 2014). Causality and economic growth and stock market returns run unilaterally or wholly in one direction from the stock market index to GDP. Olweny and Kimani (2011) inferred from their results that the movement of stock prices in the Nairobi stock exchange reflected the macroeconomic condition of the country and could therefore be used to predict the future path of economic growth. The financial sector is a conduit of FDI and a sound financial system is anchored in a sound stock exchange. Stock market efficiency enhances the stock market index and improves the outlook of the macro economy of the country.

Domestic credit is the lending or credit given by a reserve bank to borrowers within the same territory (Lane & McQuade, 2014). Domestic credit expands because of bank loans and the money that the government borrows to finance its activities; government may be the main contributor to domestic borrowing. The level of domestic debt influences the level of liquidity in the market (Loayza & Ranciere, 2006). Capital availability is subject to supply and demand and the cost or interest on this is susceptible to shifts and movements. Investors prefer to invest in countries where interest rates are high; too great a supply of domestic capital could bring down the interest rate and lower inward bound FDI. Furthermore, high domestic credit might signal a developed domestic financial sector.

International trade cannot exist without the trade openness of the countries involved (Dominte, 2006). The more open trade and financial policies a country has, the more likely it is to grow faster than those that have repressed financial and trade policies (Polat, *et al.* 2015). Trade and financial liberalisation policies aim to promote productivity by decreasing inefficiencies in investment (Polat, *et al.* 2015; UNCTAD, 2014). Trade openness does not only stimulate economic growth, but also strengthens the domestic financial sector by creating competition among local and foreign banks in the host country. Trade openness enables the country to reap optimal benefits from trade openness if the domestic financial sector is strong (Polat, *et al.* 2015). Trade openness ensures transparency, which attracts investment.

The consumer price index (CPI) is a measure that uses the weighted average of a basket of consumer services and goods. The measurement is taken monthly and changes in CPI measure the rate of inflation (Hall & Jääskelä, 2011). Inflation is the general rise in prices or the drop in purchasing power (Coibion & Gorodnichenko, 2015). Nominal interest rates are the sum of real interest rate and inflation; this implies that a change in inflation upwards increases the nominal interest rate, while a decrease in inflation reduces the nominal interest rate. Moreover, real interest rate is the net of nominal interest rate and inflation, implying that as inflation goes up, real interests fall and as inflation goes down, real interest rates rise. Higher interest rates relative to other markets attract FDI; however, there has to be a trade-off between higher interest rates, exchange rate risk and inflation before an investor commits inward bound FDI. FDI and financial sector development are complementary and the financial sector is a conduit for FDI, thus it is important that it is well structured to counter risk and inflationary pressures.

2.6 Types of Foreign Direct Investment

Bayar (2017) and Stepanok (2015) mention four types of FDI, namely mergers, acquisitions, brownfield investments and greenfield investments. A merger is a combination of a local company with a foreign company on an equal basis (Stiebale & Reize, 2011; Garskaite-Milvydiene & Burksaitiene, 2016). Stepanok (2015) argues that

mergers are motivated by expertise, technology and efficiency gains. Acquisitions occur when an MNC takes over a firm in the host country which is in the same line of business (Garskaite-Milvydiene & Burksaitiene, 2016). Brownfield investment occurs when the MNC leases or acquires an existing operation facility with the intention of continuing the operations, while greenfield investment occurs when the MNC builds or starts an operation from scratch in a foreign country (Bayar, 2017; Frantál, Kunc, Klusáček, & Martinát, 2015). Furthermore, Bayar (2017) observed that both brownfield and greenfield investments positively influence economic growth but the impact of greenfield investment is found to be relatively greater. Greenfield investment inflows fund construction of new facilities that increase the amount of physical capital, which is essential to augment production capacity, competitive markets and to reduce unemployment (Mattoo, Olarreaga, & Saggi 2004). Furthermore, Burger and Ianchovichina (2014) found that greenfield investment surges and stops were a characteristic of low income countries with more resources.

2.7 Motives for Foreign Direct Investment

The motives for FDI play a key role in understanding why various entities have different FDI drivers. Dunning (1993) argued that there are four motives that drive FDI: market seeking, efficiency seeking, strategic asset and resource seeking motives. Conditions within the host country affect the motives for FDI, as illustrated by Lu, Liu and Wang (2011) and Kaya (2014). In the same vein, Kim (2017) investigated FDI motives by looking at economic structure of the host country, growth of firms in emerging countries and their own competitiveness through the strategic use of assets. Kim (2017) argues that there must be a convergence between these conditions and the overall objective of the investing firm; the challenges are complex. The objectives of an action determine the basis of performance evaluation. Meyer (2015) observes that if the motive of FDI is to attain foreign markets then the basis of evaluation becomes the market share.

There are also different levels of interdependence between modes of FDI and motives for FDI. Kim's (2017) study reviewed the motives for FDI as they play an important role. The investigation also revealed that the motives of FDI evolve over time, according to Kim,

(2017) South Korea's outward FDI in emerging markets is for efficiency seeking and promotion of exports, however transformation takes place to market seeking and efficiency seeking motives of FDI. Furthermore, Kim (2017) suggested that the initial motives for investing in developed countries are strategic asset seeking and the promotion of exports; these evolve into strategic asset seeking and market seeking FDI. Identifying the factors and motives that influence FDI is crucial at both the microeconomic level and the macroeconomic level, including financial sector development.

Those who invest in host countries with the motive of promoting or exploiting new markets are called market seekers (Ferreira, Pinto, Serra, & Gaspar, 2011; Wadhwa & Reddy, 2011). They are driven by the sheer size of the market or its potential growth and the domestic structure of the market. In an investigation of motives of Turkish FDI across 94 parent companies, Kaya (2014) found that market potential and market access were the most common motives for FDI.

Efficiency seeking is defined as the quest to wholly improve the overall cost efficiency of an MNC (Rugman, 2006). Wadhwa and Reddy (2011) add that companies that seek efficiency are driven by economies of scope and specialisation, new sources of competition and low cost production. Efficiency seeking between heterogeneous products aims to exploit factor costs, while efficiency seeking between broadly similar or homogeneous economies seeks to enhance economies of scale by bundling production (Dunning & Lundan, 2008). One of the key drivers of FDI is the need to enhance operational efficiency through attainment of expertise and technology. Kaya (2014) found that efficiency seeking motives were associated significantly with less developed countries. Efficiency seekers focus on labour costs, distance to relevant markets, potential of integration of production process with a firm's overall cross-border production processes and availability of reliable suppliers (Rugman, 2006; Kaya, 2014).

Strategic asset seeking is undertaken 'to create or gain access to resources and capabilities that complement the firm's existing core competencies' (Dunning, 1992). In line with this

definition, Meyer (2015) suggests that companies invest in host countries for strategic reasons to enhance their market portfolios in their own country or in third market countries. Kaya (2014) adds that strategic asset seeking motives are significantly associated with investments in developing countries. This is because developing countries are endowed with vast natural resources and unexploited opportunities. The present study investigates the MENA region, which has vast, invaluable oil resources. The main aim of strategic seeking is to develop investors' capabilities through aggressive internationalisation strategies. Some FDI projects are undertaken to augment the investors' capabilities rather than to exploit capabilities in the host country (Meyer, 2015). It is the view of this researcher that developing countries have ample labour forces and raw materials but lack capital; as such, investor companies provide capital to acquire assets that they do not intend to exploit. Even though the investor does not exploit the resources, the host country does acquire some liquidity, augmented by the capital injection. This injection of capital enhances financial sector development by increasing liquidity but in the same breath, the underutilisation of resources starves the market of potential income and the losses in opportunity costs are huge. This study investigates strategic seeking motives and their effect on financial sector development in the MENA region.

Resource seeking investments are made in order to gain access to cheap raw materials, cheap pools of labour and infrastructure (Wadhwa & Reddy, 2011). Franco, Rentocchini, and Marzetti (2008) and Okafor, Piesse and Webster (2015) argue that there are improvements to the physical or strategic assets of parent companies gained from these investments. Physical resources are at the core of production and are a strong motive for FDI; there are certain resources such as minerals that can only be found in certain geographical locations and this drives investment in those areas. Multinational companies also invest in other countries to enlarge their market share footprint in host countries where there is great appetite for products and services.

2.8 Impact of FDI on Financial Sector Development: Theoretical Literature

There are two theoretical arguments that explain the diverse ways through which FDI influences development of the financial sector (Soumare & Tchana, 2015). The first is that inward bound FDI augments financial market development by increasing capital inflows into the domestic country. Furthermore, Soumare and Tchana (2015) suggest that FDI increases the likelihood that multinational company affiliates will be listed on the local exchange, since the norm in industrialised companies is that financing is done through capital markets. The benefit is an increase in liquidity in the stock market. This is in line with Mao and Yang (2016), who assert that FDI inflows will increase the amount of money available for investment in the capital markets of the host country, provided that the host country's financial market is sufficiently developed. This is also consistent with Scott-Kennel (2004), who asserts that FDI is pertinent to the finance sector as it boosts the injection of capital into the host country.

Secondly, Soumare and Tchana (2015) further suggest that, as a result of the relaxation of government regulations by the host country market liberalisation is central to well-functioning financial markets. By extension, financial intermediaries such as the banking sector, stock market and bond market are significantly influential in financial sector growth (Levin, Lin, & Chu, 2002).

Scott-Kennel (2004) argues that the need for FDI in host countries motivates the authorities to liberalise financial markets. An equity market that is well-developed signals vitality, shows openness and a market friendly environment (Soumare and Tchana, 2015). These characteristics attract foreign investors, and this is especially true of emerging markets whose capital markets are relatively more developed than markets in developing countries. However, Melenaite and Remeikiene (2016) found that financial incentives from government were ranked as least important among economic factors such as trade openness, infrastructure development and government consumption. Rashid, *et al.* (2017) found that trade openness and political stability positively influenced FDI inflows.

In order to maximise the benefits of spillover effects, Soumare and Tchana (2015) recommend that market friendly regulations and stock market regulations and mechanisms to improve governance must be central to the formulation of policies that aim to protect investors.

2.9 Impact of FDI on Financial Sector Development: Empirical Literature

Literature provides substantial empirical evidence of the impact of FDI on financial development in both the source and the destination country (Bartels, *et al.* 2008; Fauzel, 2016; Soumare & Tchana, 2015). However, it is important to note that those countries wishing to facilitate the internationalisation of their firms and to attract foreign multinational enterprises should first establish measures to improve access to external finance. Fauzel (2016) believes that there is a lack of clarity on the direct link between FDI and financial sector development. This section therefore discusses empirical evidence of a relationship between FDI and financial sector development.

Studies such as those by Seghir (2009), Al Nasser and Soydemir (2011), Ojo (2012) and Desbordes and Wei (2014, 2017) have applied the panel data approach, which is a form of longitudinal data analysis, regression models, econometric models and time-series data to investigate the causal relationships between FDI and financial sector development and vice versa. Ojo (2012) used time-series data from 1981 to 2010 from the Nigerian financial sector to investigate the causal relationship between FDI and financial sector development. He found that FDI inflow had a positive impact on financial sector development only in the short-run, but that it could not be translated into long-term financial sector growth since most of the FDI was channeled to other sectors of the economy such as the oil and gas industry.

Antras, Desai and Foley (2006) observed that FDI inflows resulted in an overall increase in funds available in the company and caused financial intermediation through the financial

markets or the banking system to flourish. Antras, *et al*. (2006) also suggested the use of econometric models to test the causality effects of financial development on FDI and vice versa.

A study by Al Nasser and Soydemir (2011) used Granger causality tests to examine data from 1978 to 2007 in 14 Latin American countries. Their study analysed the relationship between FDI and financial sector development and established that the relationship between FDI and stock market development was bidirectional, whilst the relationship with financial sector development showed a unidirectional relationship. Their results indicated that FDI inflows initially enhanced stock market development as a result of investment opportunities and spillover effects, and stock market development then attracted more FDI inflows.

Alfaro, *et al*. (2004) used time-series data from 1975 to 1995 to investigate the impact of FDI on financial sector development. They established that FDI on its own played an ambiguous role in the economic development of a country; however, countries with financial systems that were relatively developed could gain positively from its contribution to economic growth.

Studies by Desbordes and Wei (2014, 2017) investigated various effects that source and destination countries' financial development (SFD and DFD respectively) had on FDI. Desbordes and Wei (2017) examined causality by exploiting variations in both country-specific financial development and sector-specific financial vulnerability by using detailed databases on real manufacturing FDI projects worldwide. They established that both SFD and DFD had a considerable and positive influence on greenfield, expansion, mergers and acquisitions FDI, by directly increasing access to external finance and indirectly promoting manufacturing activity. In an earlier study, Desbordes and Wei (2014) investigated causality by applying a difference-in-differences approach that exploited the variation in financial vulnerability across the manufacturing sectors. Their results indicated unequivocally that a well-functioning and sophisticated financial system in source and destination countries

greatly facilitated the international expansion of firms through FDI, especially in financially vulnerable sectors.

Kholdy and Sohrabian (2005) examined the relationship between financial markets, FDI and economic growth in 25 countries for the period 1975 –2002. Their study found that there was a bidirectional causality between financial markets and FDI in countries that were more developed and those with higher GDP per capita. Adam and Tweneboah (2009) conducted a study in Ghana using a multivariate co-integration and error correction model and examined the impact of FDI on stock market development. Their study revealed that a long-term relationship existed between FDI, nominal exchange rate and development of the stock market. Similarly, Dutta and Roy (2011) conducted an empirical study of 97 countries over a period of 20 years. In their study, they established that there was a non-linear association between financial development and FDI inflows. Their study also revealed that political risks could influence the relationship between financial sector development and FDI.

Seghir (2009) used an econometric model to test the Granger causality and to determine causalities between the variables FDI and financial markets (FM). The study established that financial variables such as market size influenced FDI, and they observed that larger markets tended to be more attractive for FDI and that the geographical location and distance played an essential role in the financial markets. It was established from these findings that if there was a positive causality effect of the impact between financial sector development and FDI, a negative causality effect would imply that an impact between FDI and financial sector development would exist.

Turner (2006) noted that FDI through the entry of foreign owned banks in Europe and Mexico resulted in the banking industry being more efficient and improved credit allocation. Similarly, Crystal, *et al*. (2001) also indicated that FDI through foreign banks in Argentina, Chile and Columbia resulted in enhanced local financial stability as these banks exploited more aggressive risk management methods to survive the financial crisis. Even so, Hymer and Zurawicki (1969) noted earlier that foreign banks suffer considerable cost drawbacks

compared to domestic competition as they have to cater for legal barriers, cultural differences and increased control problems; hence they are not really comparable. As Ojo (2012) also noted, foreign banks operate with caution in a foreign country as they must realise profits by acquiring a competitive advantage and efficiencies; above all, they should be in a favourable geographical location to overcome domestic competition.

Adeniyi and Omisakin (2012) argue that total liquid liabilities, credit to the private sector and total banking sector credit are measures of financial sector development. Agbloyor, Abor, Adjasi and Yawson (2013) extend the measures by using the banking sector and stock market as proxies to capture financial market development. Tsaurai (2017a) found that FDI is influenced by higher stock market and banking sector development while lower stock market and banking sector development results in weak and insignificant FDI. Countries with advanced stock markets are likely to attract foreign direct investments and FDI can lead to development of the local stock market (Agbloyor, *et al.* 2013).

The sources of capital include FDI as well as internal financing and measures of financial sector development are used to capture different ramifications of financial intermediation. Adeniyi and Omisakin (2012) support the view that the extent of financial sophistication in the host country matters for the benefits of FDI to register on economic growth. Furthermore, Agbloyor, *et al*. (2013) reveal that more developed banking systems can lead to more FDI flows and FDI and financial sector development are complementary. Empirical evidence has shown significant complementarities between FDI and financial sector development in Africa (Adam & Tweneboah, 2009; Adeniyi & Omisakin, 2012; Agbloyor, *et al.* 2013; Tsaurai, 2017a).

Using co-integration analysis to examine the impact of FDI on the stock market, Adam and Tweneboah (2009) revealed the existence of a long-term relationship between FDI, the stock market and the nominal exchange rate. These findings confirmed the assertions that the development of the financial sector is tied to FDI and FDI is tied to economic growth. Adeniyi and Omisakin (2012) concluded that host countries must reform through upgrading

the financial structure to better position themselves to reap the desirable growth promoting effects of FDI flows. This is in line with Alfaro, *et al*. (2004). In the following section the relationship among FDI, financial development and economic growth is discussed.

2.10 Economic Growth as a Channel through which FDI influences Financial Sector Development

A number of studies have investigated either the relationship between FDI and financial sector development or the relationship between FDI and economic growth (see for instance Adams, 2009; Adekele, 2014; Adeniyi and Omisakin, 2012). Nevertheless, it is of utmost importance for the researcher to review literature that has also looked at the three-way linkage that exists among all three variables, namely FDI, financial development and economic growth. FDI benefits the economy of the host country; however, there are certain preconditions that are necessary, such as trade openness, market size, labour and legal frameworks (Duttaray, Dutt, & Mukhopadhyay, 2008; Adekele, 2014). Of late empirical studies have shown that financial sector development is important as a prerequisite for FDI and economic growth (see for instance Agbloyor, *et al.* 2013; Adam & Tweneboah, 2009). This section provides a discussion of the relationship among FDI, financial sector development and economic growth.

Duarte, Kedong and Xuemei (2017) found that there is a bidirectional causality between FDI and economic growth; furthermore, both domestic credit to private sector and economic growth are important factors in stimulating the FDI into a country. FDI and money supply have a positive effect on a country's economic growth (Duarte, *et al.* 2017; Adeniyi & Omisakin, 2012). In the same vein, Adeniyi and Omisakin (2012) emphasise that the extent of financial sophistication matters for the benefit of FDI on economic growth. Although Duarte, *et al*. (2017) use domestic credit as a proxy while Adeniyi and Omisakin (2012) used banking sector credit and credit to the private sector and liquid liabilities as proxies, there is consensus that there is a positive relationship between FDI and financial sector development and that it accentuates economic growth. FDI has certain spillover effects into the economy but these benefits are based on certain preconditions that exist in the

economy; literature shows that financial sector development is one of the preconditions for an economy to benefit from these spillover effects (Adeniyi and Omisakin,2012; Duarte, *et al.* 2017).

2.11 Gaps Found in the Literature

2.11.1 No study has so far examined the effect of FDI on financial development or focused exclusively on the MENA region as a unit of analysis; most studies in this area have focused on emerging markets or developed countries.

2.11.2 The endogeneity problem has to a great extent been ignored by empirical studies that have explored the influence of FDI on financial development.

2.11.3 Existing studies have used cross-country threshold regression models but none have utilised panel threshold regression models.

2.11.4 Among the few studies conducted in this area, none has attempted to investigate whether economic growth is a channel through which FDI influences financial development.

2.11.5 Most studies have ignored the dynamic nature of the relationship between FDI and financial sector development.

2.12 Chapter Summary

The major objective of this chapter was to expound on existing literature on the relationship between foreign direct investment (FDI) and financial sector development (FSD). The chapter gave an overview of the theoretical as well as the empirical perspectives. Literature was reviewed to position the study, and to provide context and a theoretical basis. Firstly, the theoretical background of FDI, financial sector development and economic growth was discussed through a review of seminal papers, and comparisons were made with contemporary studies. The literature showed a difference in knowledge between earlier and later studies. In order to contextualise the study, the researcher outlined the background of the type of region under investigation, namely the MENA region. In line with the research

objective, a section on FSD and its other determinants was included and furthermore, the distinct types of FDI were discussed, including empirical evidence between variables.

The literature review revealed that FDI has different and mixed effects on financial sector development. Moreover, some empirical studies have shown that FDI may increase economic growth in countries that have more developed financial markets if certain conditions are met, such as human capital and trade openness. It was also noted that several studies investigating the impact of FDI on financial sector development have been conducted in developed countries. Similar studies on financial sector development have been done in emerging countries in Africa but there is still only a small number that have focused on the MENA region, which is what provided motivation for this study. In the next chapter, the research methods, selected with the intention of achieving the desired objectives, are discussed.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

3.1 Chapter Introduction

The purpose of this chapter is to present the research methodology used to address the objectives of the study, which were outlined in chapter one. This chapter discusses and explains the research design, the variables and their proxies and provides a theoretical explanation of how explanatory variables affect financial development. The population of the study, sample size and data sources are also discussed in this chapter. Various econometric estimation techniques used by researchers who have investigated the impact of FDI on financial development are also evaluated with the overall aim of choosing the best estimation techniques for the current study. The data analysis process is also covered extensively in this chapter.

The structure of the chapter is as follows. Section 3.2 explains the chosen research paradigm and design, Section 3.3 describes the variables, theory intuition and a priori expectations while Section 3.4 discusses the measurement of all the variables used in the study. Section 3.5 justifies the population and the sample size, Section 3.6 evaluates the econometric estimation approaches that were applied by earlier research work on the FDI-led financial development nexus and Section 3.7 presents and explains the econometric model specifications for the current study. Section 3.8 describes how pre-estimation diagnostics were being handled and explains the estimation techniques used in this study. Section 3.9 deals with robustness checks and Section 3.10 with research ethics. Section 3.11 concludes the chapter.

3.2 Research Paradigm and Design

A research paradigm is those fundamental assumptions, values and beliefs with which the researcher perceives the world (Wahyuni, 2012). These beliefs guide the researcher while the study is being conducted and based on these, the researcher makes the necessary philosophical assumptions. The paradigm of this study is positivist research that strives to obtain objective knowledge that can ultimately be used to establish cause-

effect relationships. The methodology of a quantitative research study maintains the assumption of an empiricist paradigm (Creswell, 2003). The purpose of quantitative research is to establish, confirm, or validate relationships and to develop generalisations that contribute to theory (Leedy & Ormrod, 2005). Ivankova (2015) notes that a quantitative research design provides numerical information, measures variables, compares individuals and groups and tests relationships between or among variables. It is against this background that the current study chose a quantitative research design as it was best suited to addressing the objectives laid down in the introductory chapter, which were quantitative in nature.

3.3 Variables, Theory Intuition and a Priori Expectation

This section discusses three different types of variables, namely the dependent, independent and control variables. The theoretical argument on how the independent and the control variables affect the dependent variable is explained and justified in this section.

3.3.1 Dependent variable

Financial development was the dependent variable in the current study. The majority of earlier empirical studies on the FDI-led financial development nexus had shortcomings in that they ignored the fact that financial development may be affected by its own lag (Almalki & Batayneh, 2015). Two proxies of financial development were used in this study, namely broad money as a ratio of GDP and domestic credit to private sector as a ratio of GDP. As data for many MENA region countries was not available, it was not possible to use stock market and bond sector development proxies in this study.

3.3.2 Independent variable

Foreign direct investment (FDI) was the independent variable in the current study. The theoretical rationale relating to the impact of FDI on financial development was discussed extensively in the preceding chapter. An important point was made that stock market liquidity and banking sector development are enhanced by international capital inflows as

FDI brings substantial amounts of capital into the economy of the host country (Levine, 1997). Kholdy and Sohrabian (2008) also argued that foreign investors force host country governments to implement policies that promote financial sector or financial development enhancement reforms. On the other hand, a study by Raza and Jawaid (2014) found that FDI had a negative influence on the financial sector in the Asian countries in question.

3.3.3 Control variables

The thirteen control variables included economic growth, foreign aid, government consumption, trade openness, exchange rates, savings, inflation, population growth, investment, human capital development, industrial production, infrastructural development and unemployment. The theoretical influence of each control variable on the dependent variable and the expected direction of causality is discussed below.

Economic growth: Robinson's (1952) demand-following hypothesis argued that increased economic growth pushes up the standard of living of the general populace, thereby triggering a surge in the demand for different types of financial products linked to investment, savings and security. This argument was supported by a study conducted by (Wahid, *et al*. 2011). The current study expected economic growth to have a positive effect on financial development in line with theoretical predictions.

Interaction between economic growth and foreign direct investment: Economic growth has been found to have a negative effect on FDI (Jensen, 2003; Tsai, 1994; Iamsiraroj & Doucouliagos, 2015). Literature supporting the FDI-led financial development hypothesis is also available (Soumare & Tchana, 2015; Mao & Yang, 2016; Seghir, 2009; Desbordes & Wei, 2017). This study therefore expected economic growth to have a negative effect on FDI's ability to have a positive influence on financial development.

Foreign aid: Weisskoff (1972) argued that foreign aid reduces the poor's willingness and ability to save, thereby negatively influencing financial sector development. By pushing up the debt service costs of a country, foreign aid dampens savings and also inhibits investment (Abuzeid, 2009). Balde (2011) noted that foreign aid increases investment,

domestic savings and physical capital accumulation in the economy. It was therefore anticipated that foreign aid might have a positive or a negative influence on financial development.

Government consumption: The demand for more financial products is enhanced if government's consumption of goods and services increases in the economy (Liang & Teng, 2006). Excessive government consumption in the economy triggers additional domestic borrowing by the government, thereby crowding out local firms and stifling financial sector development (Naceur, *et al*. 2014). The impact of government expenditure on financial development may therefore be positive or negative.

Trade openness: Andrianaivo and Yartey (2010) found that traded openness had a negative effect on banking sector development. On the other hand, financial sector development is promoted when local firms make use of sophisticated risk management related financial products in order to contain the effects of foreign competition and external shocks encountered in international trade (Svaleryd & Vlachos, 2002). The effect of trade openness on financial development could therefore go either way.

Exchange rates: Rajan and Zingales (2003) observed that undervalued exchange rates contributed to a reduction in financial market frictions in the economy. Finding by Kappler, Reisen, Schularick and Turkisch (2013) suggest that investment levels go down in developing nations in direct response to a significant rise in domestic exchange rates. On the other hand, Cherono (2013) argued that a decline in real exchange rates makes the importation of capital intensive machinery expensive, thus stifling private investment in the economy. Against this backdrop, financial development be affected by exchange rates in a positive or negative manner.

Savings: Fry (1980) noted that increased domestic savings enhance the funds that are available for lending and investment in the economy. Contrary to most theoretical predictions, Mbulawa (2015) found that savings are a leakage from the normal flow of the funds in the economy. It is against this backdrop that the same study found that savings

gradually weakened financial sector growth in the Southern African Development Community (SADC nations). Savings were expected to influence financial development in this study, positively or negatively.

Inflation: Consumers in a high inflation environment try to cushion themselves against the effects of inflation by investing in high yielding financial assets (English, 1999). The view resonates with Sogut (2008) whose study found out that inflation had a positive impact on banking sector development in low-income countries. In contrast, Huybens and Smith (1999) observed that inflation triggered credit rationing by banks, slowing down the volume of activity in the financial sector. This is in line with findings by Bittencourt (2011) and Haslag and Koo (1999) who found the same. Inflation was expected to affect financial development, either positively or negatively.

Population: Demirgüç-Kunt, Córdova, Peria and Woodruff (2011) argued that less populated areas did not have high financial market activities; people had to travel greater distances to their nearest bank branch. In contrast, Giuliano and Ruiz-Arranz (2009) found that population size had a negative effect on financial sector development in developing countries.

Investment: On the theoretical front, Solow (1956) noted that domestic investment underpinned the development of the financial sector in any country. This finding in the investigation also reveals that the motives of FDI evolve over time, according to Kim, (2017) South Korea's outward FDI in emerging markets is for efficiency seeking and promotion of exports, however transformation takes place to market seeking and efficiency seeking motives of FDI. Similar to those of a study by Jiranyakul (2014), in which it was revealed that gross fixed capital formation (a proxy for investment) had a significant positive influence on development of the Thai financial sector. Investment was therefore anticipated to have a positive influence on financial development.

Human capital development: Kelly (1980) argued that educated people save money and invest their money in preparation for a rainy day because they have access to

information and are risk averse. This theoretical view is in line with Becker (1964), who argued that people who possess skills and knowledge are more likely to make sound financial decisions for their future.

Industrial production: Ali (2011) noted that industrial production and financial sector development were characterised by a feedback effect. This finding is consistent with that of Asprem (1989), who argued that increased industrial production, triggered by high levels of productivity in the economy results in people saving more income and investing in various financial products.

Infrastructure development: Foreign direct investment inflow into the financial and other economic sectors goes up in host countries that are characterised by high levels of infrastructure development, as stated in Dunning's (1973) eclectic paradigm hypothesis. In line with the theoretical views, the current study expected that investment, human capital development, industrial production and infrastructural development would have positive effects on financial development.

Unemployment: The unemployed are usually financially excluded as they do not have sufficient funds to participate in financial markets (Han, 2009). This view is echoed in Shabbir, Anwar, Hussain and Imran (2012) findings in a study that used Pakistan as a unit of analysis. The current study therefore anticipated that financial development would be negatively affected by unemployment.

Of the thirteen variables, five control variables were excluded from the study because the data were not available. These were foreign aid, government consumption, exchange rates, savings and inflation.

3.4 Measurement of Variables

This section discusses the various proxies of financial development, FDI and control variables. The proxies that were used in this current study were also discussed in this section.

3.4.1 Stock market development

Stock market development is a process of improvements in the quality, quantity and efficiency of stock market operations (Pradhan, Arvin, Hall, & Bahmani, 2014). A stock market can be measured based on its size, efficiency, depth and liquidity, as encapsulated in the following measures of stock market development. Firstly, stock market capitalisation (% GDP) was found by Levine and Zervos (1998) to be the best measure of stock market size. Stock market capitalisation appraises the size of the stock market in relation to the host country's economy (Soumare & Tchana, 2015). Secondly, stock market traded value (% of GDP) and stock market turnover (%) measure stock market liquidity, but Levine and Zervos (1998:540) argue that the turnover ratio clearly shows liquidity of the economy whilst stock market traded ratio is an indicator of the liquidity of a specific stock market. Not all proxies of stock market development were used in this study because data were not available.

3.4.2 Bond market development

A bond market is a financial market in which new debt can be issued by participants in the primary market and subsequent buying and selling occurs in the secondary markets. There are two bond market development proxies, namely outstanding domestic public debt securities (% of GDP) and outstanding domestic private debt securities (% of GDP) (World Bank, 2018). Fink, Haiss and Hristoforova (2003) measured the bond market size by total bond market capitalisation as a percentage of the economy and it was inclusive of both private and public sector bonds. As there were constraints caused by the unavailability of data, no proxy was used for the purposes of the current study.

3.4.3 Banking sector development

Banking sector development is a process of improving the quantity, quality and efficiency of banking services (Alfaro, *et al.* 2009). There are four commonly used measures for banking, namely broad money supply, claims on private sector, domestic credit provided by the banking sector and domestic credit to the private sector as a percentage of GDP (Levine & Zervos, 1998; Alfaro, *et al.* 2009). According to Sghaier and Abida (2013:5) the ratio of bank credit to private sector as a share of GDP is the best proxy for bank based financial development because of its nexus with economic growth and investment. The current study used only two banking sector development proxies, however: broad money (% of GDP) and domestic credit to private sector (% of GDP), as some data were unavailable.

3.4.4 Foreign direct investment

Although there are several measures of FDI (FDI to gross fixed capital formation ratio, gross FDI inflows as a ratio of GDP, net FDI inflows as a ratio of GDP), the current study used net FDI inflow as a ratio of GDP because it is a true reflection of a country's ability, not only to attract but also to keep FDI (Biglaiser & DeRouen, 2006).

A summary of the proxies that were used to measure all the variables and their sources of data is shown in Table 1.

Table 3.1: Variables, proxies and data sources

Variable	Proxy used	Source(s) of data
Financial development (FIN)	Broad money (% of GDP) Domestic credit to private sector by banks (% of GDP)	World Development Indicators, International Financial Statistics, African Development Bank and Global Financial Indicators
Foreign direct investment (FDI)	Net FDI inflow (% of GDP)	World Development Indicators
Trade openness (OPEN)	Total trade (% of GDP)	World Development Indicators, Global Financial Indicators

Economic growth (GROWTH)	GDP per capita	World Development Indicators, Global Financial Indicators
Investment (INV)	Gross fixed capital formation (as a ratio of GDP)	World Development Indicators, Global Financial Indicators
Unemployment (UNEMPL)	Unemployment total % of total labour force modeled ILO estimate	World Development Indicators, Global Financial Indicators
Human capital development (HCD)	Internet users per 100 people	World Development Indicators, Global Financial Indicators
Industrial production (IND)	Industry value traded (% of GDP)	World Development Indicators, Global Financial Indicators
Infrastructure development (INFR)	Fixed telephone subscriptions (per 100 people)	World Development Indicators, Global Financial Indicators
Population (POP)	Population growth (% annual)	World Development Indicators, Global Financial Indicators

Source: Author compilation (2019)

3.5 Population and Sample

A population encompasses the total collection of elements from which inferences are made (Blumberg, Cooper, & Schindler, 2011: 174). The population of this study consisted of the 21 countries in the MENA region, in line with the World Bank's (2018) classification. These are Lebanon, Bahrain, Malta, Libya, Kuwait, Morocco, Jordan, Oman, Israel, Qatar, Iraq, Saudi Arabia, Iran, West Bank and Gaza, Syria, Egypt, Tunisia, Djibouti, United Arab Emirates, Algeria and Yemen.

A sample frame is the list of elements from which the sample is drawn (Blumberg, *et al.* 2011). In this study, the sample frame included MENA countries that had data for the variables studied during the period ranging from 2003 to 2016. Fourteen (14) MENA

countries, namely Algeria, Bahrain, Djibouti, Egypt, Iran, Iraq, Israel, Jordan, Lebanon, Libya, Morocco, Qatar, Tunisia, West Bank and Gaza and United Arab Emirates were included in the sample. The study collected and used data of 14 years from 2003–2016. The unavailability of complete data sets for all the variables during the period under study was the main reason for countries such as Malta, Kuwait, Oman, Saudi Arabia, Syria, Egypt and Yemen being excluded from the study.

Secondary data were collected from international online databases such as the World Development Indicators, African Development Bank, Global Financial Indicators and International Financial Statistics. The use of these sources ensured the reliability and validity of the data as they are credible and reputable. These databases are also easily accessible and can be verified without difficulty (Tsaurai, 2017a).

3.6 Estimation Methods Used By Prior Researchers on FDI-Led Financial Development Hypothesis

Table 2 evaluates the estimation techniques that have been utilised by researchers whose studies investigated the influence of FDI on financial sector development.

Table 3. 2 : Estimation methods used by prior studies on FDI-led financial development hypothesis

Estimation methods	Researcher(s)	Strengths of the method	Weaknesses of the method
Ordinary least squares (OLS)	Harrison and McMillan (2003), Olugbenga and Grace (2015), Raza, *et al*. (2012), Sultana and Pardhasaradhi (2012), Dhiman and Sharma (2013)	1. Very useful in predicting the linear relationships between variables. 2. It is possible to get good results with relatively small data sets. 3. The OLS results are easy to interpret. 4. Suitable for time series data usage.	1. Not suitable for estimating the relationship between variables, which is non-linear. 2. The OLS results are not consistent in cases where there is specification bias. 3. The approach is not capable of addressing the endogeneity problem. 4. OLS procedure does not take into account the dynamic nature of the dependent variable.

			5. Not applicable for cross-sectional or panel data usage.
Correlation co-efficient analysis	Dhiman and Sharma (2013), Sultana and Pardhasaradhi (2012)	1. Shows the nature, strength and significance of the relationship between variables under study.	1. Does not show the direction of the relationship between variables, therefore the results are not useful for policy making purposes. 2. The non-linearity of the relationship between variables is not captured. 3. The dynamic nature of the dependent variable and endogeneity issues are not catered for.
Multivariate Error Correction Model (ECM)	Kholdy and Sohrabian (2008), Zafar, *et al*. (2013)	1. Suitable for time series data. 2. Shows the causality relationship between variables both in the short and long run.	1. The approach does not include control variables. 2. It does not cater for either panel or cross-sectional data. 3. The endogeneity problem that normally exists in the relationship between variables is ignored. 4. Does not take into account the dynamic nature of the dependent variable.
Multivariate vector error correction model (VECM)	Zakaria (2007)	1. Indicates the direction of causality between variables. 2. Shows whether the causality is in the long or short run. 3. The approach is applicable to time series data sets.	1. Ignores the dynamic characteristics of the dependent variable. 2. Does not address the endogeneity problem in the relationship between or among the variables. 3. Excludes control variables. 4. Not suitable for panel and cross-sectional data sets.
Autoregressive distributive lag (ARDL)	Azam and Ibrahim (2014), Raza and Jawaid (2014), Zafar, *et al*. (2013)		
Vector autoregressive (VAR) model	Abzari, *et al*. (2011)		
Dynamic Generalised methods of moments (GMM)	Harrison and McMillan (2003), Harrison, *et al*. (2004), Hericourt and Poncet	1. Addresses the endogeneity issues prevalent in the econometric relationships between variables.	1. Does not capture the impact of the lagged independent variables on the dependent variables. This means that it does not cater for a scenario in which independent

	(2009), Tsaurai (2018a,b)	2. Captures the dynamic characteristics of the dependent variable. 3. Suitable even in cases where the relationship between variables is non-linear. 4. Can be used to estimate the threshold levels in non-linear relationships (see Kremer (Bick & Nautz 2013).	variables take longer to have a meaningful influence on the dependent variable. 2. Cannot strictly be applied where the number of countries (N) is lower than number of years (T).

Source: Author's compilation (2019)

To a great extent, the information (strengths and weaknesses columns in Table 2) played a significant role in influencing the choice of the estimation techniques used in the current study. It is quite evident, given the information in Table 2, that the advantages of the dynamic generalised method of moments (GMM) and the lagged independent variables approaches outweigh the advantages of the other estimation techniques that have been used by researchers to investigate FDI-led financial development.

3.7 Model Specification(S)

Equation 1 is a general model specification that shows a summary of the variables that influence financial development, according to the literature discussed in Section 3.3 and in the preceding chapter.

FIN=f (FDI, OPEN, GROWTH, INV, UNEMPL, HCD, IND, INFR, POP) [1]

These variables are foreign direct investment (FDI), trade openness (OPEN), economic growth (GROWTH), investment (INV), unemployment (UNEMPL), human capital development (HCD), industrial production (IND), infrastructural development (INFR) and population size (POP). In equation 1, financial development (FIN) is the dependent variable, FDI is the independent variable and the remainder constitutes control variables. The choice of the control variables was to a large extent based on two reasons: (1)

availability of data, as some relevant control variables, data for which were not available, were excluded from the study; (2) only control variables whose effect on financial development is supported by literature were considered.

For example, a study by Tsaurai (2018a) on a similar subject used control variables such as economic growth, trade openness, inflation, government consumption and unemployment. Control variables used by Tsaurai (2018b) in a study investigating the role of human capital development in the FDI-led financial development hypothesis included economic growth, exchange rates, inflation, trade openness, savings, human capital development and infrastructural development. Raza, Iqbal, Ahmed, Ahmed and Ahmed (2012) included inflation, exchange rate and domestic savings as control variables in a study that investigated the impact of FDI on stock market development in Pakistan.

In econometric terms, equation 1 is transformed into equation 2 in order to show the impact of FDI and other control variables on financial development:

$$FIN_{i,t} = \beta_0 + \beta_1 FDI_{i,t} + \beta_2 X_{i,t} + \mu + \varepsilon \quad [2]$$

where the error term is represented by Ɛ. The intercept term is denoted by β_0 and μ is a proxy for time invariant and unobserved country specific effect (Tsaurai, 2018c). A matrix of control variables is represented by X. The current study included eight control variables, namely population size, infrastructural development, industrial production, human capital development, unemployment, investment, economic growth and trade openness. Subscripts t and i represent time and country respectively. β_1 and β_2 are the co-efficients of FDI and control variables respectively.

In order to take the dynamic nature of the financial development data ($FIN_{i,t-1}$) into account, as in Tsaurai (2018a, b), equation 2 is converted into equation 3:

$$FIN_{i,t} = \beta_0 + \beta_1 FIN_{i,t-1} + \beta_2 FDI_{i,t} + \beta_3 X_{i,t} + \mu + \varepsilon \quad [3]$$

The argument that financial development is positively affected by its lag was supported by Almalki and Batayneh's (2015) study, which found that banking sector development in Saudi Arabia was positively but significantly affected by prior banking sector policies.

The third objective of the study was to explore whether economic growth was a channel through which FDI influenced financial development in the MENA region. This research objective was captured in equation 4 from an econometric point of view:

$$FIN_{i,t} = \beta_0 + \beta_1 FIN_{i,t-1} + \beta_2 FDI_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 + (FDI_{i,t}.GROWTH_{i,t}) + \beta_5 X_{i,t} + \mu + \varepsilon \quad [4]$$

Nath (2005) noted that FDI promotes economic growth through boosting total factor productivity and increasing the total capital accumulation in the economy. On the other hand, higher levels of economic growth enable people's standard of living to improve, which then leads to an increase in uptake of financial services and overall financial sector development (Robinson, 1952). The combination of higher FDI inflow and economic growth was therefore expected to have a significant positive effect on financial development in this study. Iamsiraroj and Doucouliagos (2015:7) found that high economic growth had a negative impact on FDI, especially if there were fewer or no future opportunities for international investors to make profits as a result of over utilised resources. Under such a circumstances, it was anticipated that economic growth would have a deleterious effect on the positive influence of FDI on financial development.

As in Tsaurai's (2018b) study, a significant positive β_4 in equation 4 implies that the combination of (1) FDI and economic growth enhances financial development. On the other hand, a negative β_4 means that economic growth is a channel through which FDI has a negative effect on financial development.

3.8 Data Analysis

This section focuses on three aspects: the pre-estimation diagnostics, diagnostic tests and a discussion of the estimation technique(s) applied in the current study. Trend analysis of the mean values, descriptive statistics and correlation analysis are the three pre-estimation diagnostics that were performed in order to understand the characteristics of the data before using them for main data analysis. The aim was to determine whether there was a multi-collinearity problem (correlation analysis), whether extreme values existed in the data (trend analysis of the mean values and descriptive statistics) and whether the data followed a normal distribution (descriptive statistics). If these problems (extreme values, multi-collinearity problem and data not following a normal distribution) were to exist in the data, they would need to be resolved before the main data analysis in order to enhance the quality of the findings (Hair Jr, Black, Babin, & Anderson, 2014).

After pre-estimation diagnostics, as per Tsaurai and Odhiambo (2013) the next stage was to investigate whether the data were stable, using unit root testing. The current study used Im, Pesaran and Shin, (2003), Levin, Lin and Chu (2002), Fisher-Phillip Peron test (Choi, 2003) and the Fisher-Augmented Dick Fuller test (Maddala and Wu, 1999) panel unit root tests. The null hypothesis, which stated that the tests had a unit root, was not rejected if the data were unstable or unstationary. After the data were found to be stationary at first difference, the next econometric procedure was to determine whether there was a long-run relationship among the variables being studied (Tsaurai & Odhiambo, 2013). The current study used the Kao (1999) approach to determine whether the variables being studied were co-integrated (characterised by a long-run relationship). The existence of a long-run relationship among variables is a precondition that must be met before main data analysis is conducted (Tsaurai. 2017b:11). The next procedure was to test for endogeneity (if any one of the explanatory variables used was correlated with the error term). The endogeneity tests were done using the Hausman (1978) approach.

The current study used Arellano and Bond's (1991) dynamic GMM approach, fixed effects, random effects, pooled OLS, and fully modified ordinary least squares (FMOLS) to estimate equations 3 and 4. The dynamic GMM has the following advantages:

1. Usable even in cases where the relationship between variables follows a non-linear format.
2. Addresses the fact that financial development can be influenced by its own lag.
3. Capable of decisively dealing with the endogeneity problem.

These characteristics are evidence that the dynamic GMM is a superior estimation technique and that it enriched the current study.

3.9 Robustness Checks

As in Tsaurai's (2018d) study, which used the lagged independent variable approach, the current study assumed for robustness purposes that the impact of FDI and the control variables on financial sector development was not immediate. To be precise, it assumed that it would take one year for the explanatory variables to have an impact on the dependent variable (financial development), in line with Tsaurai (2018d: 273). Such an approach was also supported by a study by Matthew and Johnson (2014). Equation 5 expresses a scenario in which it takes a year to for all the explanatory variables to have an influence on the dependent variable.

$$FIN_{i,t} = \beta_0 + \beta_1 FDI_{i,t-1} + \beta_2 GROWTH_{i,t-1} + \beta_3 (FDI_{i,t-1}.GROWTH_{i,t-1}) + \beta_4 OPEN_{i,t-1} + \beta_5 INV_{i,t-1} + \beta_6 UNEMPL_{i,t-1} + \beta_7 HCD_{i,t-1} + \beta_8 IND_{i,t-1} + \beta_9 INFR_{i,t-1} + \beta_{10} POP_{i,t-1} + \mu + \varepsilon \quad [5]$$

Just as in other studies that have used the lagged independent variable approach, this study used the pooled ordinary least squares (OLS), fixed effects, random effects and FMOLS approaches to estimate equation 5. The advantage of these approaches is that they contain more degrees of freedom and sample variability and can also estimate relationships that are not linear.

3.10 Research Ethics

As it was necessary to access data from third party institutions, several ethical issues were considered when handling the data and publishing information. Secondary data were collected from online international databases such as the World Development Indicators, African Development Bank, Global Financial Indicators and International Financial Statistics. Owing to the prohibition of incentives, the researcher could not use any to gain access to information. The researcher also paid attention to copyright, plagiarism and fabrication issues as appropriate recognition and credit was given to all sources used. The researcher was honest and unbiased throughout all the research processes. Ethical clearance was obtained from the UNISA ethics committee and all ethical standards and regulations set by UNISA were adhered to.

3.11 Chapter Summary

This chapter opened by explaining the research paradigm and design to be followed in the study. All the variables used, their theoretical influence on financial development and the proxies of each variable were discussed. Population and sample size for the study was described and justified. The chapter also provided an evaluation of the various econometric estimation methods that have been used in empirical research work that has investigated the effect of FDI on financial development. The general model specification and econometric estimation procedures applicable to the current study were described and explained in this chapter. The choice of data analysis methods and procedures was also discussed and justified. The next chapter focuses on the actual data analysis, the presentation and discussion of results and their interpretation.

CHAPTER 4: RESULTS PRESENTATION AND DISCUSSIONS

4.1 Chapter Introduction

The preparation of the data for main data analysis is explained in this chapter. The following aspects are discussed: the character of the data, trend analysis between variables, correlation analysis in order to check the existence of (1) a priori relationships between variables and (2) any multi-collinearity problem between and among variables being studied. Panel stationarity tests were conducted to ascertain whether the data were stable and to establish whether a long-run relationship existed between and among the variables (co-integration tests).

Using E-Views software, the data were analysed using panel methods such as fixed effects, random effects, pooled OLS, FMOLS and dynamic GMM approaches. The study used two models to analyse the impact of FDI on financial sector development in the MENA region. The first model used broad money as a measure of financial development (results in Table 6) while domestic credit to the private sector was used as a proxy for financial development in the second model (see results in Table 7).

The remainder of the chapter is organised as follows. Section 4.2 provides the mean and overall mean trend analysis for all the variables studied. Section 4.3 discusses the correlation analysis whilst Section 4.4 presents the descriptive statistics. Panel stationarity tests are discussed in section 4.5 and Section 4.6 focuses on panel co-integration tests. The main data analysis and the interpretation of results are covered in Section 4.7. Robustness tests are discussed in section 4.8. Section 4.9 summarises the chapter.

4.2 Mean and Overall Mean Trend Analysis (2003–2016)

Table 1 shows the mean and overall mean trends of all the variables for the MENA region during the period spanning 2003 to 2016. The identification of abnormal values was the

main aim of the trend analysis exercise, as in Aye and Edoja's (2017) study. The latter noted that in cases where abnormal values exist, corrective action should be taken in order to deal with the problem of spurious results.

Table 4.1: Mean trends in MENA region variables during the period 2003–2016										
	DC	FDI	OPEN	GR	INV	UNEMP	HCD	IND	INFR	POP
Algeria	15.06	1.10	66.73	4174	31.63	12.64	16.40	49.19	8.07	1.70
Bahrain	61.10	5.36	150.5	20899	26.34	1.23	58.74	44.28	21.07	4.73
Djibouti	27.39	10.49	92.74	1291	28.67	6.18	5.61	16.85	1.96	1.67
Iran	48.31	0.87	47.35	5123	27.69	11.47	20.86	43.87	33.57	1.19
Iraq	4.67	1.22	88.30	4169	16.74	8.24	5.84	57.47	5.02	2.86
Israel	69.9	3.77	70.88	29067	19.57	8.56	55.39	20.13	44.54	1.88
Jordan	77.21	9.14	123.2	3281	25.34	13.36	30.36	26.50	7.44	4.15
Lebanon	84.88	9.85	89.23	7404	24.24	7.24	40.29	15.65	18.52	3.81
Libya	14.91	2.35	106.9	8711	27.30	18.80	11.14	71.84	15.85	0.93
Morocco	58.93	2.76	75.23	2637	30.23	9.76	37.67	25.91	7.53	1.27
Qatar	44.25	2.96	93.76	67489	35.73	0.69	57.09	94.02	19.84	9.87
Tunisia	68.05	3.18	98.41	3799	22.19	14.50	29.98	27.55	10.95	1.04
UAE	61.39	3.36	145.8	39690	21.65	3.01	66.44	52.89	23.91	6.94
West Bank	26.85	1.28	80.40	2175	22.81	24.51	32.96	20.65	8.84	2.80
Overall mean	**47.35**	**4.12**	**94.95**	**14279**	**25.72**	**10.01**	**33.49**	**40.49**	**16.22**	**3.20**

Source: Author compilation (2019)

DC, FDI, OPEN, GR, INV, UNEMP, HCD, IND, INFR and POP stand for domestic credit to the private sector, foreign direct investment, trade openness, economic growth, investment, unemployment, human capital development, industry value traded, infrastructural development, and population growth respectively.

Six countries (Algeria, Djibouti, Iraq, Libya, Qatar and West Bank) had a mean domestic credit to the private sector lower than the overall mean domestic credit to the private sector of 47.35% of GDP. The remaining countries (Bahrain, Iran, Israel, Jordan, Lebanon, Morocco, Tunisia and the UAE) had a mean domestic credit to the private sector values greater than the overall mean (see Table 1). Of the 14 MENA region countries, only Iran and Qatar were not outliers; their mean domestic credit to the private sector was fairly close to the overall mean domestic credit to the private sector of 47.35% of GDP.

Bahrain, Djibouti, Jordan and Lebanon were the only MENA region countries whose mean FDI was higher than the overall mean FDI of 4.12% of GDP. Algeria, Djibouti, Iran, Iraq, Jordan, Lebanon, Libya and West Bank were outliers because their mean FDI values deviated too much from the overall mean FDI (Tsaurai, 2019a).

In terms of trade openness, Bahrain, Jordan, Libya, Tunisia and UAE had mean trade openness values greater than the overall mean trade openness of 94.95% of GDP. The remaining MENA region countries were characterised by mean trade openness values that were lower than the overall mean trade openness value. MENA region countries that were outliers as far as trade openness was concerned included Algeria, Bahrain, Iran, Israel, Jordan, Morocco, UAE and West Bank; their mean values of trade openness deviated too much from the overall mean trade openness value.

Using GDP per capita as a measure of economic growth (GR), only Bahrain (US$ 20 899), Israel (US$ 29 067), Qatar (US$ 67 489) and UAE (US$ 39 690) had a mean economic growth higher than the overall mean economic growth of US$ 14 279. All the remaining MENA region countries had mean economic growth values far lower than the overall mean economic growth value; hence they were outliers, as in Tsaurai (2019a).

Bahrain, Israel, Qatar and UAE were all outliers because their mean economic growth values far exceeded the overall mean economic growth value.

Countries whose mean investment rates exceeded the overall mean investment rate of 25.72% of GDP included Algeria, Bahrain, Djibouti, Iran, Libya, Morocco and Qatar. It is evident that Algeria (31.63% of GDP), Iraq (16.74% of GDP), Israel (19.57% of GDP), Morocco (30.23% of GDP) and Qatar (35.73% of GDP) were outliers as their mean investment values differed considerably from the overall mean investment value of 25.72% of GDP.

Six of the MENA region countries' mean unemployment rates exceeded the overall mean unemployment rate of 10.01% of total labour force: Algeria, Iran, Jordan, Libya, Tunisia and West Bank. Of these six countries, only Libya (18.80% of total labour force) and West Bank (24.51% of total labour force) were outliers, with their mean unemployment rates far exceeding the overall mean unemployment rate. Bahrain, Qatar and UAE were also outliers as their mean unemployment rates were far lower than the overall mean unemployment rate of 10.01% of total labour force.

With regard to human capital development, six MENA region countries (Bahrain, Israel, Lebanon, Morocco, Qatar and the UAE) had a mean internet user value above the overall mean internet user value of 33 people. Djibouti (six people), Iraq (six people) and Libya (11 people) recorded the lowest mean human capital development and could be referred to as outliers. Bahrain (59 people), Israel (55 people), Qatar (57 people) and UAE (66 people) also outliers because their mean internet users (human capital development) values were much higher than the overall mean internet users value.

There were seven MENA region countries whose mean industry value traded (IND) were lower than the overall mean industry value traded of 40.49% of GDP: Djibouti (16.85% of GDP), Israel (20.13% of GDP), Jordan (26.50% of GDP), Lebanon (15.65% of GDP), Morocco (25.91% of GDP), Tunisia (27.55% of GDP) and West Bank (20.65% of GDP). All seven countries were outliers as their mean industry value traded values were far

lower than the overall mean industry value traded. On the other hand, Iraq, Libya and Qatar were also outliers as their mean industry traded values far exceeded the overall mean value.

Using fixed telephone subscriptions per 100 people as a proxy for infrastructural development, Algeria, Djibouti, Iraq, Jordan, Libya, Morocco, Tunisia and West Bank had a mean infrastructural development that was less than the overall mean infrastructural development of 16 fixed telephone subscriptions per 100 people. Algeria (eight fixed telephone subscriptions per 100 people), Djibouti (two fixed telephone subscriptions per 100 people), Iraq (five fixed telephone subscriptions per 100 people), Jordan (seven fixed telephone subscriptions per 100 people), Morocco (eight fixed telephone subscriptions per 100 people) and West Bank (nine fixed telephone subscriptions per 100 people) were outliers as their mean infrastructural development values were far lower than the overall mean infrastructural development of 16 fixed telephone subscriptions per 100 people. Among the MENA region countries whose mean infrastructural development values were greater than the overall mean infrastructural development value, only Israel and Iran were outliers (see Table 1).

Only five MENA region countries had a mean population growth higher than the overall mean population growth of 3.2%: Bahrain, Jordan, Lebanon, Qatar and UAE. Algeria, Djibouti, Iran, Israel, Libya, Morocco and Tunisia were outliers with mean population growth values far lower than the overall mean population growth value of 3.2%. On the other hand, Qatar (9.87%) and UAE (6.94%) are outliers as their mean population growth values far exceeded the overall mean population growth value.

These trend analysis results indicated clearly that there were extreme values (outliers) in each variable studied. All the data sets were converted to natural logarithms before using the data for the main analysis in order to exclude the problem of extreme values (spurious results), as in Aye and Edoja's (2017) study.

4.3 Correlation Analysis

Table 2 shows the prima facie relationship between the variables under study for the MENA region during the period 2003–2016. The strength and the significance of the relationship between variables was ascertained in this section. Drawing on the literature (see for instance Adam & Tweneboah, 2009; Tsaurai, 2018b) the study used correlational statistical techniques to measure the association of variables, and statistical significance techniques to test significance of the variables. Correlation is a bivariate statistical technique that measures the strength of association between pairs of variables and the direction of the relationship (Baltagi, 2005). The value of the correlation co-efficient may vary from (+1), indicating a positive perfect degree of association between two variables, and a value of (-1), indicating a negative perfect association between variables. As the correlation co-efficient value moves closer to zero, the relationship between the two variables becomes weaker. Baltagi (2005) observes that a statistical significance test provides a (p) value stating the probability that random chance could explain the result. In general, a (p) value of 5% or lower is considered to be statistically significant.

Table 4.2: Correlation analysis

	DC	FDI	OPEN	GR	INV	UNEMP	HCD	IND	INFR	POP
DC	1.00									
FDI	0.28***	1.00								
OPEN	0.26***	0.28***	1.00							
GR	0.16**	-0.10	0.26***	1.00						
INV	-0.001	0.07	-0.08	0.19***	1.00					
UNEMP	-0.27***	-0.21***	-0.31***	-0.59***	-0.18**	1.00				
HCD	0.60***	-0.15**	0.32***	0.59***	0.05	-0.40***	1.00			
IND	-0.42***	-0.27***	0.14**	0.47***	0.19***	-0.22***	-0.06	1.00		
INFR	0.38***	-0.11	-0.11	0.43***	-0.11	-0.24***	0.38***	0.08	1.00	
POP	0.11	0.12	0.25***	0.63***	0.20***	-0.46***	0.24***	0.42***	0.10	1.00

Note: ***/**/* denotes statistical significance at the 1%/5%/10% level respectively.

Source: Author compilation from E-Views (2019)

The results in Table 2 reflect a positive and significant relationship between (1) domestic credit to the private sector and FDI, (2) domestic credit to the private sector and trade openness, (3) domestic credit to the private sector and economic growth, (4) domestic credit to the private sector and human capital development, and (5) domestic credit to the private sector and infrastructural development. These results are consistent with the available literature. A negative but non-significant relationship between domestic credit to the private sector and investment was observed. Unemployment and industry value traded were both found to be negatively but significantly related to domestic credit to the private sector. These findings make sense in as far as the available literature is concerned. Population and domestic credit to the private sector were found to be positively but non-significantly related (see Table 2).

The remaining results from the correlation analysis were not particularly relevant in this case as what was more important were the relationships between variables in line with the theme of the study. In other words, investigating how financial development (domestic credit to the private sector) was related to FDI, trade openness, economic growth, investment, unemployment, human capital development, industry value traded, infrastructural development and population growth was the main focus of the correlation analysis.

The maximum correlation absolute value was 60% (between human capital development and domestic credit to the private sector). This was evidence that the problem of multi-collinearity between and among variables studied was absent, in line with (Stead, 1996). The presence of a positive and significant correlation between FDI and financial development in line with the literature allowed further empirical investigations on the relationship between the two variables. A weakness of the correlation analysis was that it assumed that the relationship between FDI and financial development was linear in nature and did not show the direction of the relationship between the two variables. This further justified the need to perform further empirical tests in order to incorporate the non-linear dimension and to show the direction of the relationship between the two variables.

4.4 Descriptive Statistics

The data were analysed using E-Views, and the basic statistics to describe the data were calculated. The main purpose was to describe the nature and character of the data using statistics such as mean, median, maximum, minimum, standard deviation, skewness, kurtosis and the Jarque-Bera criterion (see Table 3). More specifically, the character and nature of the data were described in order to (1) check whether abnormal (extreme) values existed and (2) to determine whether the data for the variables was or was not normally distributed. As mentioned in the preceding section, such information crucial to decisions on the transformation of the data before using it for analysis, in order to avoid spurious results.

Standard deviation is a measurement of the quantity of variation or dispersion of a set of values (Creswell, 2008). Skewness is a measurement of the degree and direction of asymmetry and kurtosis is a measure of tail extremity that reflects either the presence of outliers or a distribution's propensity for producing outliers (Westfall, 2014). The Jarque-Bera criterion is a test of goodness of fit and is run to test normality; specifically, the test matches the skewness and kurtosis of the data to determine whether it matches a normal distribution (Gujarati & Porter, 2009). Descriptive statistics include the following: first, the range, which is a measure of the spread of a variable and is equal to the net of the largest and smallest observations; the median, which splits the distribution such that half of all values are above this value and half are below the value; the maximum, which is the largest value of the variable; and the minimum, which is the smallest value of the variable (Baltagi, 2005). The mean is a measure of central tendency and is sensitive to extremely large or small values. It is commonly known as the average (Westfall, 2014). Table 4.3 provides a summary of the basic statistics of mean, median, maximum, minimum, standard deviation, skewness and kurtosis.

Table 4.3: Descriptive statistics										
	DC	FDI	OPEN	GR	INV	UNEMP	HCD	IND	INFR	POP
Mean	47.4	4.12	94.95	14279	25.72	10.01	33.49	40.49	16.22	3.20
Median	47.17	2.49	90.29	5050	25.42	9.39	24.55	32.21	12.59	1.85
Maximum	107.3	23.5	191.9	88564	46.1	26.9	98.0	181.57	46.68	16.3
Minimum	0.89	0.01	39.0	819.9	5.37	0.14	0.60	14.07	1.34	0.01
Standard deviation	26.4	4.46	31.3	19256	6.67	6.58	27.01	24.69	11.75	3.17
Skewness	-0.08	2.14	0.85	2.08	0.20	0.60	0.70	1.95	1.04	2.23
Kurtosis	1.86	8.2	3.5	7.1	3.96	2.92	2.34	9.75	3.34	7.89
Jarque-Bera	10.80	367	25.2	275	8.90	11.72	19.1	496	36.26	357
Probability	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
Observations	196	196	196	196	196	196	196	196	196	196

Source: Author compilation from E-Views (2019)

As Section 4.3 exhaustively discussed the overall mean trends were discussed in Section 4.3 in some detail, these will receive no further attention in this section. The range (see Baltagi, 2005), the difference between maximum and minimum values for domestic credit to the private sector, trade openness, economic growth and industry value traded, was very wide, thus providing evidence of the existence of extreme values. The standard deviation (see Creswell, 2008) of the economic growth data was the only one to exceed 1 000. This finding confirmed that extreme or abnormal values existed in the economic growth data, in line with (Tsaurai, 2019b).

Only domestic credit to the private sector data was skewed to the left (see Table 4). Kurtosis values were close to 3 for trade openness, investment, unemployment, human capital development and infrastructure development; the data sets for these variables were normally distributed, as in (Tsaurai, 2018a: 77). The probabilities of the Jarque-Bera criterion for all the variables except economic growth were equivalent to zero. This finding provided evidence that the data for all the variables under study, with the exception of economic growth, did not follow a normal distribution (Tsaurai, 2017a). As in Aye and Edoja (2017), the problem was effectively dealt with by first converting the data into natural logarithms before using them for main analysis, as explained in Section 4.2 above.

4.5 Panel Stationarity Tests

The study used four panel unit root testing methods to test the stability of the data on all variables. These methods were Im, Pesaran and Shin (2003), Levin, Lin and Chu (2002), Fisher-PP test (Choi, 2003) and Fisher-ADF Test (Maddala & Wu, 1999). Panel unit root tests were applied at both level and first difference with individual intercept (see results in Table 4).

Table 4.4: Panel root tests – Individual intercept				
Level				
	LLC	IPS	ADF	PP
DC	-2.11**	-0.35	31.32	26.60
BM	-0.43	0.77	18.41	19.82
FDI	-1.09	0.07	25.11	40.79*
OPEN	-4.65***	-2.37***	49.36***	46.63**
GR	-5.46***	-2.12**	43.06**	53.71***
INV	-2.60***	-1.70**	40.67*	41.07*
UNEMP	-64.30***	-17.43***	41.33*	61.99***
HCD	0.86	0.34	26.30	40.70
IND	-27.79***	-7.67***	36.63	38.53*
INFR	-6.69***	-3.13***	52.98***	76.57***
POP	-7.71***	-5.33***	49.65***	15.32
First difference				
DC	-7.25***	-2.93***	54.10***	94.76***
BM	-5.05***	-2.59***	50.55***	90.18***
FDI	-1.90**	-2.40***	46.21**	138.99***
OPEN	-7.43***	-4.14***	64.49***	101.15***
GR	-48.55***	-11.31***	62.13***	102.45***
INV	-5.05***	-3.97***	62.78***	125.27***
UNEMP	-184.98***	-37.47***	57.24***	106.37***
HCD	-22.35***	-5.67***	56.01***	105.96***

IND	-47.48***	-10.99***	59.27***	84.42***
INFR	-29.17***	-7.61***	62.64***	127.96***
POP	-87.87***	-18.91***	44.23**	65.04***

Note: LLC, IPS, ADF and PP stand for Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003); ADF Fisher Chi Square and PP Fisher Chi Square tests respectively. *, ** and *** denote 10%, 5% and 1% levels of significance, respectively.

Source: Author's compilation from E-Views (2019)

The study found that not all variables used were stationary at level (see Table 4), consistent with Tsaurai's (2018e) argument that those variables whose data are not significant are referred to as non-stationary. However, all the variables studied were found to be stationary at first difference across all four panel unit root testing methods, paving the way for co-integration tests using the Kao (1999) approach.

4.6 Panel Co-Integration Tests

Table 4.5: Results of Kao Residual Co-integration Test – Individual intercept	
Series	ADF t-statistic
BM FDI OPEN GR INV UNEMP HCD IND INFR POP	-2.6808***
DC FDI OPEN GR INV UNEMP HCD IND INFR POP	-3.6541***

*, ** and *** denote 10%, 5% and 1% levels of significance, respectively.

Source: Author's compilation from E-Views (2019).

Two Kao (1999) tests with different measures of financial development (broad money supply, domestic credit to the private sector) failed to accept the null hypothesis, which stated that there was no co-integration at the 1% significance level (see Table 5). The results indicate that, using two different measures of financial development, there was a long-run relationship between the variables under study. The fact that the variables were

found to be stationary at first difference (integrated of order 1) and co-integrated (existence of a long-run relationship), the next stage was to perform the main data analysis using fixed effects, random effects, pooled OLS, FMOLS and dynamic GMM methods (see chapter 5).

4.7 Main Data Analysis and Interpretation of Results

Model 1 used broad money as a ratio of GDP as a measure of financial development while model 2 used domestic credit to the private sector as a proxy for financial development. The independent (FDI) and explanatory (economic growth, the interaction term, trade openness, investment, unemployment, human capital development, industry value added, infrastructural development, population growth) variables used were the same for both models.

Table 4.6: Panel data analysis results – Model 1					
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**	**Dynamic GMM**
$BM_{i,t-1}$	-	-	-	-	0.9069***
FDI	0.0532	0.0047	0.3201**	0.0593	0.0457
GR	-0.4397***	-0.2821***	-0.0498	-0.3880***	-0.0220
FDI.GR	-0.0078	-0.0026	-0.0309**	-0.0094	-0.0058
OPEN	-0.0641	0.1396	0.3180***	0.0346	0.0517
INV	0.2812***	0.2736***	0.5354***	0.3199***	0.0828*
UNEMPL	0.0861	-0.0273	0.0127	0.0728	-0.0125
HCD	0.2163***	0.1715***	0.0974***	0.1916***	0.0064
IND	-0.4392***	-0.3932***	-0.5499***	-0.3264*	-0.0355
INFR	0.1314**	0.1809***	0.1443***	0.1361*	0.0343
POP	-0.0991***	-0.0708***	0.0004	-0.1216***	-0.0143*
Number of countries	14	14	14	14	14
Number of observations	196	196	196	196	196
Adjusted R-squared	0.9050	0.5603	0.6391	0.9045	0.9283

F-statistic	81.78	23.57	35.53	-	J-static = 184
Prob (F-statistic)	0.00	0.00	0.00	-	Prob (J-statistic) =0.00

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views (2019).

Financial development (proxied by broad money as a ratio of GDP) was found to have been positively and significantly influenced by its lag under the dynamic GMM approach in model 1, consistent with Tsaurai (2018b: 119). FDI had a non-significant positive influence on financial development under the fixed effects, random effects, FMOLS and the dynamic GMM approach, whilst the impact of FDI on financial development under the pooled OLS was found to be significantly positive. These results resonate with those of Kholdy and Sohrabian (2008), whose study found that foreign investors forced the host country governments to adopt and implement financial development enhancement policies.

A significant negative relationship running from economic growth to financial development was observed under the fixed effects, random effects and the FMOLS approaches. On the other hand, pooled OLS and the dynamic GMM methods revealed that economic growth had a non-significant negative impact on financial development. These results are similar to those of Tsaurai (2018b: 199), who study noted that economic growth had a negative impact on financial development.

The interaction between FDI and economic growth had a non-significant negative effect on financial development under the fixed effects, random effects, FMOLS and the dynamic GMM methods, while the interaction term under the pooled OLS had a significant negative influence on financial development. It was clear from these results that economic growth had a deleterious effect on FDI's ability to enhance financial development, as Iamsiraroj and Doucouliagos (2015) found.

The fixed effects measure revealed that trade openness had a non-significant negative impact on financial development, in line with Andrianaivo and Yartey's (2010) findings. Under the random effects, FMOLS and the dynamic GMM, a significant positive relationship running from trade openness to financial development was detected. Trade openness was also found to have had a significant positive influence on financial development under the pooled OLS approach. These findings are similar to those of Svaleryd and Vlachos (2002), who argued that higher levels of trade openness enhanced

local firms' participation in international markets, forcing them to make use of sophisticated risk management financial products in order to cope with the negative effects of external shocks and foreign rivalry.

Across all five panel methods, investment was found to have a significant positive impact on financial development, a finding that resonates with Solow's (1956) theoretical argument that domestic investment is the bedrock of financial sector development in any country.

A non-significant negative relationship running from unemployment to financial development was detected under the random effects and the dynamic GMM, as in Han (2009), who argued is that the unemployed population is financially excluded by virtue of its having insufficient funds to participate meaningfully in financial markets. Contrary to the available literature, fixed effects, pooled OLS and FMOLS showed that unemployment had a non-significant positive influence on financial development.

In line with an argument by Becker (1964) who found that the skilled and the better educated are more likely to make meaningful financial decisions, the current study found that human capital development had a significant positive effect on financial development under the fixed effects, random effects, pooled OLS and FMOLS. The dynamic GMM approach, however, revealed that a positive impact of human capital development on financial development was not significant.

Industry valued added (IND) had a significant negative influence on financial development under the fixed effects, random effects, pooled OLS and FMOLS, while the dynamic GMM showed a non-significant negative relationship running from industry value added to financial development. These results run counter to the available literature (Ali, 2011; Asprem, 1989), which generally argues that increased industrial production enhances economic growth, wealth and GDP per capita thus enabling people to save and invest more money in financial instruments.

The impact of infrastructural development on financial development was found to be positive and significant under the fixed effects, random effects, pooled OLS and FMOLS. On the other hand, the dynamic GMM showed that infrastructural and financial development were positively but non-significantly related, with the relationship running from the former to the latter. These results are in line with Dunning's (1973) eclectic paradigm hypothesis, which argues that higher levels of infrastructural development attract foreign investment into not only the financial sector of the host country but into every facet of the economy.

Similar to Giuliano and Ruiz-Arranz (2009), a significant negative relationship running from population growth to financial development was observed under the fixed effects, random effects, FMOLS and the dynamic GMM approach. However, the pooled OLS method showed that population growth had a non-significant positive effect on financial development, as in Demirgüç-Kunt, *et al*. (2011) whose study found that financial institutions are drawn to establishing branches in areas where population density is high.

Table 4.7: Panel data analysis results – Model 2					
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**	**Dynamic GMM**
$DC_{i,t-1}$	-	-	-	-	0.8581***
FDI	0.0395	0.0110	0.8208***	0.0676	0.0515
GR	-0.2048***	-0.0605	-0.2468***	-0.1907*	-0.0703***
FDI.GR	-0.0074	-0.0030	-0.0776***	-0.0118	-0.0054
OPEN	-0.3797***	-0.0685	0.2835**	-0.2253	0.0611*
INV	0.4232***	0.4011***	0.5418***	0.4853***	0.0905**
UNEMPL	0.1610**	0.0115	-0.1685***	0.1691*	-0.0532***
HCD	0.2396***	0.2085***	0.3775***	0.2459***	0.0566***
IND	-0.5809***	-0.6275***	-0.6024***	-0.4711**	-0.0569*
INFR	0.2058***	0.3131***	0.5766***	0.2106**	0.0865***
POP	-0.0544**	-0.0101	0.0258	-0.0665**	-0.0044
Number of countries	14	14	14	14	14
Number of observations	196	196	196	196	196
Adjusted R-squared	0.9566	0.5976	0.8015	0.9642	0.9809
F-statistic	187.72	29.95	79.75	-	J-static = 184
Prob (F-statistic)	0.00	0.00	0.00	-	Prob (J-statistic) =0.00

Source: Author's compilation from E-Views (2019). ***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

In model 2, the lag of financial development (measured by domestic credit to the private sector as a ratio of GDP) had a significant positive effect on financial development under the dynamic GMM approach. This finding is similar to that of Almalki and Batayneh (2015), who observed that prior banking sector policies had a significant positive influence on the development of the banking sector in Saudi Arabia.

FDI was found to have a significant positive influence on financial development under the pooled OLS method, while the other four econometric estimation methods (fixed effects, random effects, FMOLS, dynamic GMM) showed a non-significant positive relationship running from FDI to financial development. These results are generally in keeping with those of Shahbaz and Rahman (2010), whose study revealed that FDI inflow into the host country enhanced completion, efficiency and development of the financial sector.

The analysis revealed that economic growth had a significant negative impact on financial development under the fixed effects, pooled OLS, FMOLS and the dynamic GMM. On the other hand, a non-significant negative relationship running from economic growth to financial development was observed under the random effects approach. Both sets of results were in line with Tsaurai's (2018b: 119) findings.

The interaction between FDI and economic growth was found to have a non-significant negative influence on financial development under the fixed effects, random effects, FMOLS and the dynamic GMM; the negative impact of the interaction between FDI and economic growth on financial development was found to be significant, however. These results indicated that economic growth was a channel through which FDI had a negative influence on financial development in the MENA region, as in Jensen (2003), who found that economic growth had a negative influence on FDI.

Under the fixed effects method, trade openness had a significant negative effect on financial development while the random effects and FMOLS methods produced results that indicated a non-significant negative relationship running from trade openness to financial development. These results are similar to those of Andrianaivo and Yartey

(2010). On the other hand, pooled OLS and the dynamic GMM showed that the positive impact of trade openness on financial development was significant, consistent with Svaleryd and Vlachos (2002). Investment had a significant positive effect on financial development across all five panel data methods, in line with the finding by Jiranyakul (2014) that investment had a significant positive effect on financial development in Thailand.

A significant positive relationship running from unemployment to financial development was observed under the fixed effects and FMOLS; on the other hand, random effects showed that unemployment had a non-significant positive impact on financial development. These results run counter to the available literature on the subject. In contrast, pooled OLS and dynamic GMM produced results that indicated that unemployment had a significant negative influence on financial development, consistent with Han (2009) and Shabbir, *et al*. (2012) on the significance of unemployment on financial development.

In line with Kelly (1980), who argued that better skilled and educated people made wise financial decisions (saving and investing) because they were well informed, the current study found that human capital development had a significant positive impact on financial development across all the five panel data estimation methods. The study found that a significant negative impact of industry value added on financial development across all the five panel data analysis methods. This finding differs from some findings in the available literature (Ali, 2011; Asprem, 1989). In this study it was found that infrastructural development (proxied by fixed telephone subscriptions per 100 people) had a significant positive effect on financial development. Tsaurai (2018b:119) found similar results.

A significant negative relationship running from population growth to financial development was detected under both fixed effects and FMOLS while random effects and the dynamic GMM produced results indicating that the influence of population growth on financial development was negative but non-significant. These results are similar to those of Giuliano and Ruiz-Arranz (2009). In support of Demirgüç-Kunt, *et al*.'s (2011)

argument, the study found that under the pooled OLS approach, population growth had a non-significant positive impact on financial development.

4.8 Robustness Tests

The lagged independent variable approach is a more accurate way of estimating the relationship between macroeconomic variables as it takes into account the fact that the influence of one macroeconomic variable on another is not instantaneous (Matthew & Johnson, 2014). This argument was supported by Tsaurai (2018d), who found that independent macroeconomic variables took about a year before they could have a meaningful impact on the dependent macroeconomic variable. It is against this backdrop that the current study used the lagged independent variable approach for robustness checks (see results in Table 8 and 9).

Table 4.8: The lagged independent variable approach (t-1) – Model 3				
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**
FDI	-0.0450	0.0133	0.2969**	-0.0131
GR	-0.1206*	-0.1360***	-0.0567	-0.0738
FDI.GR	-0.0022	-0.0046	-0.0278*	-0.0029
OPEN	0.0810	0.1584*	0.3037***	0.1739
INV	0.3983***	0.40000***	0.5097***	0.3851***
UNEMPL	-0.0038	-0.0191	0.0212	0.0416
HCD	0.1268***	0.1234***	0.0826**	0.1013***
IND	-0.0206	-0.1308**	-0.4284***	-0.1586
INFR	0.0851	0.0920*	0.1343**	0.0835
POP	-0.1444***	-0.1172***	-0.0136	-0.1455***
Number of countries	14	14	14	14
Number of observations	196	196	196	196
Adjusted R-squared	0.8878	0.5625	0.5502	0.8867
F-statistic	68.0837	17,3274	24.8517	-
Prob (F-statistic)	0.00	0.00	0.00	-

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views (2019).

A non-significant positive impact of FDI on financial development was found (1) in both models 3 and 4 under the random effects and (2) in model 4 under the FMOLS approach. A significant positive relationship running from FDI to financial development was observed in both models 3 and 4 under the pooled OLS approach. These results are in keeping with Abzari, *et al*.'s (2011) findings in the case of Iran, Pakistan, Turkey, Bangladesh and Nigeria. FDI had a non-significant negative influence on financial development in both models 3 and 4 under the fixed effects approach while similar results were noted in model 3 under the FMOLS. This finding is similar to those of Harrison and McMillan (2003), who observed that FDI crowded domestic firms out of financial markets.

In both models 3 and 4, the random effects approach showed that economic growth had a significant negative influence on financial development, a result that was also observed in model 3 under the fixed effects and in model 4 under the pooled OLS method. In model 3, under the pooled OLS and FMOLS, a non-significant negative relationship running from economic growth to financial development was detected. The latter results contradict the available literature. In addition, fixed effects and FMOLS in model 4 showed a non-significant positive relationship running from economic growth to financial development, a finding that generally resonates with the literature (Robinson, 1952).

Table 4.9: The lagged independent variable approach (t-1) – Model 4				
	Fixed effects	**Random effects**	**Pooled OLS**	**Fully modified OLS (FMOLS)**
FDI	-0.0317	0.0957	0.6261***	0.0402
GR	0.0153	-0.0993*	-0.2891***	0.0087
FDI.GR	-0.0011	-0.0108	-0.0592***	-0.0084
OPEN	-0.4019***	-0.0915	0.2784**	-0.3502**
INV	0.5150***	0.5507***	0.6853***	0.5473***
UNEMPL	0.0372	-0.0983**	-0.1864***	0.1049
HCD	0.1651***	0.1962***	0.3131***	0.1676***
IND	-0.1259*	-0.3318***	-0.5179***	-0.2975
INFR	0.1581**	0.3631***	0.6068***	0.1543*
POP	-0.1154***	-0.0433*	0.0184	-0.1128***
Number of countries	14	14	14	14
Number of observations	196	196	196	196
Adjusted R-squared	0.9536	0.5814	0.7516	0.9593
F-statistic	175.2762	25.7103	60.0052	-
Prob (F-statistic)	0.00	0.00	0.00	-

***, ** and * denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views (2019).

When using the pooled OLS approach in both models 3 and 4, it was found that the interaction term had a significant negative influence on financial development while the fixed effects, random effects and the FMOLS showed a non-significant negative relationship running from the interaction term to financial development in both models 3 and 4. These results are similar to those observed in the preceding section (main data analysis). They indicate that economic growth weakened the positive influence of FDI on financial development, a finding that echoes Tsai's (1994) observation that economic growth reduces the efficiency of FDI.

The study found a significant positive relationship running from trade openness to financial development in (1) both models 3 and 4 under the pooled OLS and (2) in model 3 under the random effects approach. Trade openness was also found to have a non-significant positive impact on financial development in model 3 under the fixed effects and FMOLS, in line with Svaleryd and Vlachos's (2002) findings. In model 4 under the fixed effects and FMOLS, trade openness was found to have a significant negative impact on financial development; on the other hand, random effects in the same model showed a non-significant negative influence of trade openness on financial development, results that were contrary to those of Tsaurai (2018b:119).

In models 3 and 4 investment had a significant positive impact on financial development across all the five panel data analysis methods used, a finding that was in keeping with theoretical predictions (Solow, 1956; Jiranyakul, 2014). In model 3, unemployment had a non-significant negative impact on financial development under the fixed and random effects, yet model 4 showed a significant negative relationship running from unemployment to financial development under the random and pooled OLS approach. These results are similar to those of Han (2009) and Shabbir, *et al*. (2012). Moreover, a non-significant positive relationship running from unemployment to financial development was observed in (1) both models 3 and 4 under FMOLS approach, (2) model 3 under the pooled OLS and (3) model 4 under the fixed effects, findings that run counter to the literature.

Human capital development was found to have a significant positive impact on financial development in both models 3 and 4 across all five of the panel data econometric estimation methods used. This finding supports De Gregorio's (1996) view that higher levels of human capital development improve the amount of savings and investment in the economy.

A significant negative relationship running from industry value added to financial development was observed in (1) both models 3 and 4 under random effects and pooled OLS and (2) model 4 under the fixed effects approach. FMOLS showed that industry value added had a non-significant negative impact on financial development in both models 3 and 4 and also in model 3 under the fixed effects approach. These results are not supported by any of the available literature.

Fixed effects, random effects and pooled OLS produced results that revealed that infrastructural development had a significant positive influence on financial development in both models 3 and 4, a finding that was also observed in model 4 under the FMOLS method. Furthermore, a non-significant positive relationship running from infrastructural development to financial development was detected in model 3 under the FMOLS approach. These results are in agreement with Tsaurai (2018b) and Dunning (1973).

Population growth was found to have a significant negative effect on financial development under the fixed effects, random effects and FMOLS in both models 3 and 4, yet pooled OLS under model 3 showed that the negative impact of population growth on financial development was not significant. These results are generally in agreement with Giuliano and Ruiz-Arranz (2009), whose study found that population growth had a negative influence on financial development in developing countries. On the other hand, population growth had a non-significant positive influence on financial development in model 4 under the pooled OLS method, a finding similar to that of (Demirgüç-Kunt, *et al*. 2011).

4.9 Chapter Summary

Three pre-estimation tests that were conducted in this study were discussed in this chapter. These were trend analysis, correlation analysis and descriptive statistics. They were performed chiefly in order to describe the data and understand its characteristics before main data analysis was done. Diagnostic tests, which included panel unit root and co-integration tests were also conducted in order to check whether the data characteristics met the requirements for performing panel data analysis. The data for all variables were found to be integrated of order 1 and co-integrated, thus paving the way for the main data analysis.

The chapter discussed the main data analysis, which used five panel data analysis methods, namely fixed effects, random effects, pooled OLS, FMOLS and the dynamic GMM to address the objectives of the study. Robustness tests were done using the lagged independent variable approach with panel data analysis estimation methods such as fixed effects, random effects, pooled OLS and FMOLS. Using broad money (model 1) and domestic credit to the private sector (model 2) as ratios of GDP, the lag in financial development was found to have a significant positive impact on financial development under the dynamic GMM approach in models 1 and 2. This finding resonated with both the theoretical and the empirical literature. Investment, human capital development and infrastructural development were found to have a significant positive impact on financial development across all the panel data analysis methods used. In models 1 and 2, either a significant negative or a non-significant negative relationship running separately from economic growth, industry value added or population growth towards financial development was observed. Economic growth was also found to have a deleterious effect on the ability of FDI to positively influence financial development in the MENA region. The next chapter provides the conclusions, recommendations and suggestions for future research based on the results discussed in this chapter.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Chapter Introduction

This chapter provides a summary of the findings, conclusions and a discussion of policy implications of these findings for the MENA region. The chapter also discusses how and to what extent findings of the study are in keeping with the literature available on the subject (the impact of FDI on financial development). A comparison of the research objectives and the research findings is also provided in this chapter as a way of checking the extent to which the study addressed the aims of the study. Contribution of the study, limitations of the study and suggestions for future research are also provided in this chapter.

The remainder of the chapter is organised as follows: Section 5.2 is a summary of the results. Section 5.3 provides conclusions and discusses the policy implications for the MENA region. Section 5.4 covers the limitations of the study. Section 5.5 discusses the contribution of the study to the body of literature. Section 5.6 summarises suggestions for future research.

5.2 A Summary of the Results

In the main data analysis section 4.7(in the preceding chapter), both models showed that the lag in financial development had a significant positive effect on financial development, in line with Tsaurai's (2018a:81) findings. These results also supported those of Almalki and Batayneh (2015), whose study found that previous banking sector policies had a significant positive influence on banking sector development in Saudi Arabia.

In model 1 under fixed effects, random effects and pooled OLS, FDI had a significant negative effect on financial development, a finding similar to that of Tsaurai (2018b: 119). In contrast, model 2 showed a significant positive relationship running from FDI to financial development under the pooled OLS method, in line with the majority of the theoretical literature (Abzari, Zarei, & Esfahani, 2011; Levine, 1997; Soumare & Tchana, 2015; Kholdy & Sohrabian, 2008; Shahbaz & Rahman, 2010) in this field. Fixed effects

and FMOLS showed that economic growth had a significant negative impact on financial development in both models 1 and 2, a finding that was also observed in model 1 under the random effects and in model 2 under both the pooled OLS and the dynamic GMM approach. These results support Robinson's (1952) argument that high economic growth boosts GDP per capita, wealth and consumers' ability to save and invest in financial assets.

The interaction between FDI and economic growth was found to have a significant negative influence on financial development in models 1 and 2 under the pooled OLS method. This finding indicates that economic growth had a deleterious effect on the impact of FDI on financial development in the MENA region, as in Tsai (1994) and Jensen (2003), who argued that economies that expand at a higher rate than the growth in FDI inflows are associated with a decline in FDI as a ratio of GDP (scaling effects). High economic growth may also negate FDI if there is no opportunity for foreign investors to make a profit from relatively overutilised resources (Iamsiraroj & Doucouliagos. 2015: 7).

As in Svaleryd and Vlachos (2002), trade openness had a significant positive effect on financial development in models 1 and 2 under the pooled OLS method, a finding that was also observed in model 2 under the fixed effects and the dynamic GMM approach.

Both model 1 and 2 indicated that the positive impact of investment on financial development was significant across all five panel data analysis methods, in line with the literature (Jiranyakul, 2014; Solow, 1956). In model 2, unemployment was found to have a significant positive impact on financial development under the fixed effects and FMOLS, in contrast to the available literature on the subject. On the other hand, pooled OLS and the dynamic GMM showed a significant negative relationship running from unemployment to financial development in model 2, in support of a finding by Shabbir, *et al*. (2012).

In models 1 and 2, human capital development had a significant positive effect on financial development under fixed effects, random effects, pooled OLS and FMOLS, a finding that was also observed in model 2 under the dynamic GMM method. These results support

Kelly's (1980) theoretical argument that educated and skilled people are risk averse and invest in the financial markets because they are well informed. In contrast to theoretical predictions, industry value added and financial development were found to be negatively and significantly related, with the direction of influence running from the former to the latter under fixed effects, random effects, pooled OLS and FMOLS in both models. A similar finding was observed in model 2 under the dynamic GMM approach.

Fixed effects, random effects, pooled OLS and FMOLS produced results showing that infrastructural development had a significant positive impact on financial development in both models 1 and 2, a finding that was similar to that observed in model 2 under the dynamic GMM. This finding supports Dunning's (1973) eclectic paradigm hypothesis, which lists infrastructural development as one of the factors attracting foreign investment into the financial and other sectors of the economy. Under the fixed effects and FMOLS in both models, population growth was found to have a significant negative impact on financial development, a finding similar to that observed in model 1 under the random effects and the dynamic GMM. Although running counter to the theoretical literature, this result was in line with Giuliano and Ruiz-Arranz's (2009) findings in the case of developing countries.

5.3 Conclusions and Policy Implications

Using both financial development proxies, the lag in financial development was found to have a significant positive effect on financial development in the MENA region under the dynamic GMM approach. The implication of this finding is that MENA region countries should be urged to develop and implement policies that develop and deepen financial development in order to perpetuate future financial development.

To a large extent, main data analysis (both models) found that FDI had a non-significant positive influence on financial development in the MENA region. The study therefore indicates that MENA region countries should be urged to avoid undue reliance on FDI in their efforts to develop their financial sectors. Economic growth had either (1) a non-

significant negative impact or (2) a significant negative effect on financial development, while economic growth was also found to have a detrimental effect on FDI's ability to improve financial development. MENA region nations are therefore urged to avoid implementing economic growth enhancement policies as a way of trying to improve financial development, directly or indirectly, as the effort has been shown to achieve the opposite effect.

Although these results were mixed, in the majority of cases (in both models 1 and 2), trade openness was found to have either a significant positive effect or a non-significant positive impact on financial development. It is against this background that MENA region countries are encouraged to improve their trade openness levels in order to enhance financial development.

In the majority of cases, investment, human capital development and infrastructural development were found to have a significant positive impact on financial development in both models 1 and 2 (main data analysis). It is for this reason that the current study recommends that the MENA region implements policies targeted at enhancing investment and strengthening human capital and infrastructural development, if they intend to deepen financial sector development.

Both models (main data analysis– see section 4.7 in the preceding chapter) generally revealed that population growth had either a significant or non-significant negative influence on financial development. Although these results contradict the available literature, an explanation could be that in countries characterised by high population growth, governments could borrow from the domestic financial markets in order to cater for the welfare of their, people thus crowding out private investment. The study therefore recommends that the MENA region implements population growth reduction policies as a way of stimulating financial development.

5.4 Limitations of the Study

The unavailability of data, inadequate financial resources and a limited timeframe were three limitations encountered in this study. The World Bank (2018) lists 21 MENA region countries: Bahrain, Lebanon, Libya, Malta, Kuwait, Jordan, Oman, Israel, Morocco, Qatar, Saudi Arabia, Yemen, Iraq, West Bank, Iran, Syria, Gaza, Tunisia, Djibouti, Egypt, Algeria and the United Arab Emirates. As a result of the unavailability of data for some of these countries, the current study ended up choosing a sample of 14 countries (Bahrain, Algeria, Egypt, Djibouti, Iraq, Iran, Jordan, United Arab Emirates, Israel, Libya, Lebanon, Qatar, Morocco, Tunisia, West Bank and Gaza). Variables such as foreign aid, government expenditure, exchange rates, savings and inflation were found to have an influence on financial development in the literature (see chapter 3 section 3.3.3) but were excluded from the main model as explanatory variables owing to the unavailability of data.

The availability of sufficient financial resources might have allowed the researcher to purchase missing data from private databases, thereby increasing the number of MENA region countries in the model. This might have improved the quality and reliability of the results in as far as the impact of FDI on financial development in the MENA region is concerned. The researcher could not present the progress of her work on the dissertation at local or international conferences, which might have improved the quality of the final product, also as a result of inadequate financial resources.

The University of South Africa allows two years for the completion of a master's degree. Given this limited timeframe, the researcher had to narrow the scope of the study to make it possible to complete the study within the given period of time. The fact that the researcher was employed on a full-time basis while studying towards the degree further explains the fact that time constraints were a major limitation encountered in this study.

5.5 Contribution of the Study

There are several aspects to this study's contribution, namely (1) from a literature point of view, (2) from a methodology angle and (3) from the viewpoint of the results. To the best of the researcher's knowledge, no study has yet investigated the impact of FDI on financial development exclusively in the MENA region. This deserved a separate study since this region has had a unique pattern of financial development and FDI inflows over the last two decades (Cavusgil, 2013). The current study thus fills a gap in the literature.

As far as the researcher is aware, no study among the ones which have investigated the FDI led financial development hypothesis, other than Tsaurai (2018b), has taken into account the fact that the lag in financial development influences financial development. Unlike Tsaurai (2018b), whose study focused on emerging markets, the current study used the MENA region exclusively as a unit of analysis, and also used two banking sector development proxies for financial development. The current study also used fixed effects, random effects, pooled OLS, FMOLS and the dynamic GMM approaches for result comparison purposes, unlike Tsaurai (2018b), whose study used only the dynamic GMM method.

The endogeneity problem was to a very large extent ignored by prior empirical studies that explored the influence of FDI on financial development. The current study used the dynamic GMM econometric estimation as one of the panel data analysis methods, an approach which effectively deals with both the endogeneity problem and the dynamic characteristics of the dependent variable (financial development), consistent with Arellano and Bond (1991).

Although it is clear from the literature that economic growth has a negative influence on FDI (Tsai, 1994; Jensen, 2003; Iamsiraroj & Doucouliagos, 2015) and also that FDI has a significant impact on financial development (Seghir, 2009; Al Nasser & Soydemir, 2011; Ojo, 2012; Desbordes & Wei, 2014; Antras, *et al*. 2006; Alfaro, *et al.* 2004; Kholdy & Sohrabian, 2005; Turner, 2006; Adam & Tweneboah, 2009), to date no study exists that

has attempted to investigate whether economic growth is a channel through which FDI influences financial development. The current study goes some way towards filling this gap.

Among empirical studies that have explored the impact of FDI on financial development, none that the researcher is aware of have taken into account the argument by Matthew and Johnson (2014) that the impact of one macroeconomic variable on another is not instantaneous. The current study added to our knowledge in this area by using the lagged independent variable approach as a form of robustness check (see section 4.8 of the preceding chapter). Last but not least, the current study is the first of its kind to include a comprehensive list of control variables (trade openness, investment, unemployment, human capital development, industry value added, infrastructure development and population growth) in the model used to investigate the impact of FDI on financial development.

5.6 Suggestions for Future Research

This study investigated whether economic growth was a channel through which FDI influenced financial development in the MENA region. Future studies could explore all the possible channels through which FDI might have an influence on financial development in the MENA region. As some data were not available, the study used only 14 of the 21 MENA region countries, as noted above (see section 3.5). Given the availability of data, future studies should include more or all 21 countries in order to produce results that can be generalised to all the MENA region nations.

As a result of an absence of complete data, the study used only two proxies of financial development (broad money and private credit to the private sector as ratios of GDP) to investigate the impact of FDI on financial development in the MENA region. If such data are available, future studies should include more proxies of financial development in order to form a more comprehensive understanding of the impact of FDI on financial development in the MENA region. In keeping with the approach of Kremer *et al*. (2013),

future studies should investigate the minimum threshold level that FDI must reach before having a significant positive effect on financial development in the MENA region.

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